

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 60/132145  
(B) FILING DATE: 12/9/96

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Guise, Jeffrey W.  
(B) REGISTRATION NUMBER: 34,613  
(C) REFERENCE/DOCKET NUMBER: 231/003

(ix) TELECOMMUNICATION INFORMATION:

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(B) TELEFAX: (213) 955-0440  
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(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAATT	TTATGTATT	ACTTACTGTT	TTTCTTATCA	CCCAGATGAT	TGGGTCAGCA	120
CTTTTGCTG	TGTATCTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTG	TATTGATGAA	AACGATAACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAAC	GTGAGGGAGAT	TAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300
AACAAAGAGG	AGACGAAGAA	AGAAAACAGC	TTTGAAATGC	AAAAAGGTGA	TCAGAACATCCT	360
CAAATTGCGG	CACATGTCAT	AAAGTGAGGCC	AGCAGTAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAA	TGGGAAACAG	480
CTGACCGTTA	AAAGACAAAGG	ACTCTATTAT	ATCTATGCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAGCTT	CGAGTCAAGC	TCCATTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTCGAGAGAA	TCTTACTCAG	AGCTGCAAAT	ACCCACAGTT	CCGCCAAACC	TTGCGGGCAA	660
CAATCCATT	ACTTGGGAGG	AGTATTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTCA	CGTCCTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 783 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

ATGATAGAAA	CATAACGCCA	AACTTCCCCC	AGATCCGTGG	CCACTGGACT	TCCAGCGAGC	60
ATGAAGATT	TTATGTATTT	ACTTAACGTGTT	TTCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTGCTG	TGTATCTCA	TAGAAGATTG	GATAAGGTG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTG	TATTCTAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAGG	ATCTTTATCC	240
TTGCTGAAC	GTGAGGGAGAT	GAGAAGGCAA	TTGAAAGACC	TTGTCAGGA	TATAACGTTA	300
AACAAAGAAG	AGAAAAAAAGA	AAACAGCTTT	GAAATGCAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAACCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGGTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGGTTAAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAATCGG	540
GAGCCTTCGA	GTCAACGCC	ATTCATCGTC	GGCCTCTGGC	TGAAGCCCAG	CATTGGATCT	600
GAGAGAAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCC	CCCAGCTTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGGCGGAGT	GTTTGAATTA	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAGTGAT	CCACAGAGTT	GGCTTCTCAT	CTTTTGGCTT	ACTCAAACTC	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 783 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

ATGATCGAAA	CATAAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAATTT	TTATGTATTT	ACTTAACGTGTT	TTCTTATCA	CCAGATGAT	TGGGTCAGCA	120
CTTTTGCTG	TGTATCTCA	TAGAAGATTG	GATAAGGTG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTG	TATTCTAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAGG	ATCTTTATCC	240
TTGCTGAAC	GTGAGGGAGAT	GAGAAGGCAA	TTGAAAGACC	TTGTCAGGA	TATAACGTTA	300
AACAAAGAAG	AGAAAAAAAGA	AAACAGCTTT	GAAATGCAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAACCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGGTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGGTTAAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAATCGG	540
GAGCCTTCGA	GTCAACGCC	ATTCATCGTC	GGCCTCTGGC	TGAAGCCCAG	CATTGGATCT	600
GAGAGAAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCC	CCCAGCTTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGGCGGAGT	GTTTGAATTA	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAGTGAT	CCACAGAGTT	GGCTTCTCAT	CTTTTGGCTT	ACTCAAACTC	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 786 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

ATGATCGAAA	CATAAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
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ATGAAAATT	TTATGTATT	ACTTACTGTT	TTCCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTGCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTG	TATTCATGAA	AACGATAACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAAC	GTGAGGGAGAT	AAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300
ACAAAGAGG	AGACGAAGAA	AGAAAACAGC	TTTGAATGC	AAAAAGGTGA	TCAGAATCCT	360
CAAATTGCGG	CACATGTCAT	AACTGAGGCC	AGCAGTAAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAAA	TGGGAAACAG	480
CTGACCCTTA	AAAGACAAGG	ACTCTATTAT	ATCTATGCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAAGCTT	CGAGTCAAGC	TCCATTTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTCGAGAGAA	TCTTACTCAG	AGCTGCAAAT	ACCCACAGTT	CCGCCAAACC	TTGCAGGGCAA	660
CAATCCATT	ACTTGGGAGG	AGTATTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTC	CGTCCTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 783 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAATT	TTATGTATT	ACTTACTGTT	TTCCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTGCTG	TGTATCTTCA	TAGAAGATTG	GATAAGGTCG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTG	TATTCAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAAGG	ATCCTTATCC	240
TTGCTGAAC	GTGAGGGAGAT	GAGAAGGCAA	TTTGAAGACC	TTGTCAAGGA	TATAACGTTA	300
ACAAAGAGG	AGAAAAAGA	AAACAGCTT	GAAATGCAAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAAGCCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGTTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGGTTAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAACCGG	540
GAGCCTTCGA	GTCAACGCC	ATTCATCGTC	GGCCTCTGGC	TGAAGCCAG	CATTGGATCT	600
GAGAGAAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCC	CCCAGCTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGCGGAGT	GTGTTGAATT	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAGTGT	CCACAGAGTT	GGCTCTCAT	CTTTGGCTT	ACTCAAACTC	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 786 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

ATGATAGAAA	CATACAGCCA	ACCTTCCCCC	AGATCCGTGG	CAACTGGACT	TCCAGCGAGC	60
ATGAAGATT	TTATGTATT	ACTTACTGTT	TTTCTTATCA	CCCGAGATGAT	TGGGTCAGCA	120
CTTTTGCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTG	TATTCATGAA	AACGATAACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAAC	GTGAGGGAGAT	AAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300

AACAAAGAGG AGACGAAGAA AGAAAACAGC TTTGAAATGC AAAAAGGTGA TCAGAACCT	360
CAAATTGCGG CACATGTCAT AAGTGAGGCC AGCAGTAAA CAACATCTGT GTTACAGTGG	420
GCTAAAAAG GATACTACAC CATGAGCAAC AACTGGTAA CCCTGGAAA TGGGAAACAG	480
CTGACCGTTA AAAGACAAGG ACTCTATTAT ATCTATGCC AAGTCACCTT CTGTTCCAAT	540
CGGGAAGCTT CGAGTCAAGC TCCATTATA GCCAGCCTCT GCCTAAAGTC CCCCGGTAGA	600
TTCGAGAGAA TCTTACTCAG AGCTGCAAAT ACCCACAGTT CCGCCAAACC TTGCGGGCAA	660
CAATCCATTCACTTGGGAGG AGTATTGAA TTGCAACCAG GTGCTTCGGT GTTTGTCAAT	720
GTGACTGATC CAAGCCAAGT GAGCCATGGC ACTGGCTTCA CGTCCTTGG CTTACTCAAA	780
CTCTGA	786

(2) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 786 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

ATGATAGAAA CATAACGCCA ACCTTCCCCC AGATCCGTGG CAACTGGACT TCCAGCGAGC	60
ATGAAGATT TTATGTATTT ACTTACTGTT TTCCTTATCA CCCAAATGAT TGGATCTGTG	120
CTTTTGCTG TGTATCTTCA TAGAAGGTG GACAAGATAG AAGATGAAAG GAATCTTCAT	180
GAAGATTTG TATTGATGAA AACGATAACAG AGATGCAACA CAGGAGAAAG ATCCTTATCC	240
TTACTGAAC GTGAGGGAGAT TAAAAGCCAG TTTGAAGGCT TTGTGAAGGA TATAATGTTA	300
AACAAAGAGG AGACGAAGAA AGAAAACAGC TTTGAAATGC AAAAAGGTGA TCAGAACCT	360
CAAATTGCGG CACATGTCAT AAGTGAGGCC AGCAGTAAA CAACATCTGT GTTACAGTGG	420
GCTAAAAAG GATACTACAC CATGAGCAAC AACTGGTAA CCCTGGAAA TGGGAAACAG	480
CTGACCGTTA AAAGACAAGG ACTCTATTAT ATCTATGCC AAGTCACCTT CTGTTCCAAT	540
CGGGAAGCTT CGAGTCAAGC TCCATTATA GCCAGCCTCT GCCTAAAGTC CCCCGGTAGA	600
TTCGAGAGAA TCTTACTCAG AGCTGCAAAT ACCCACAGTT CCGCCAAACC TTGCGGGCAA	660
CAATCCATTCACTTGGGAGG AGTATTGAA TTGCAACCAG GTGCTTCGGT GTTTGTCAAT	720
GTGACTGATC CAAGCCAAGT GAGCCATGGC ACTGGCTTCA CGTCCTTGG CTTACTCAAA	780
CTCTGA	786

(2) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 864 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

AACTCTAACG CAGCATGATC GAAACATACA GTCAACCTTC TCCCCGCTCC GTGGCCACTG	60
GACCACCTGT CAGTATGAAA ATTTTTATGT ATTACTTAC AGTTTTCTT ATCACCCAGA	120
TGATTGGGTC AGCGCTTTT GCTGTGTATC TTCACAGACG ATTGGACAAG ATAGAAGACG	180

AAAGGAATCT	TCATGAAGAT	TTTGTGTTCA	TGAAAACGAT	ACAGAGATGC	AATAAAGGAG	240
AGGGGTCTCT	ATCCTTACTG	AACTGTGAGG	AAATTAGAAG	CCGGTTGAA	GACTTGGTCA	300
AGGATATAAT	GCAAAACAAA	GAAGTAAAGA	AGAAAGAAAA	AAACTTGAA	ATGCACAAGG	360
GTGATCAGGA	GCCTCAGATA	CGGGCACATG	TCATCAGTGA	GGCCAGTAGT	AAAACAACCT	420
CTGTTCTCCA	GTGGGCCCCC	AAAGGATACT	ACACCCTAAG	CAACAACCTG	GTAACCCCTG	480
AAAACGGGAA	ACAGCTGGCC	GTGAAAAGAC	AAGGATTCTA	TTACATCTAC	ACCCAAGTCA	540
CCTTCTGTT	CAATCGGGAA	ACTTTGAGTC	AAGCTCCATT	TATAGCCAGC	CTCTGCCTGA	600
AGTCCCCAAG	TGGATCAGAG	AGAATCTTAC	TGAGAGCTGC	AAACACCCAC	AGTTCTTCCA	660
AACCATGCGG	GCAGCAATCC	ATTCACTTAG	GAGGAGTCTT	TGAATTGCAA	TCGGGTGCTT	720
CGGTGTTGT	CAATGTGACT	GATCCAAGTC	AA GTGAGCCA	CGGGACGGGC	TTCACATCAT	780
TTGGCTTACT	CAAACCTCTGA	ACGGTGTAAAG	CCAGCAGGCT	GCGGCTGGGC	TGATGCTGGT	840
GGTCTTCACA	ATCCAGGAAA	GCAG				864

(2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3634 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

GAATTCCGGG	TGATTCACT	CCCGGCTGTC	CAGGCTTGT	CTGCTACCCC	ACCCAGCCTT	60
TCCTGAGGCC	TCAAGCCTGC	CACCAAGCCC	CCAGCTCCTT	CTCCCCGCAG	GACCCAAACA	120
CAGGCCTCAG	GACTCAACAC	AGCTTTCCC	TCCAACCCGT	TTTCTCTCCC	TCAACGGACT	180
CAGCTTCTG	AAGCCCCTCC	CAGTTCTAGT	TCTATCTTT	TCCTGCATCC	TGTCTGGAAG	240
TTAGAAGGAA	ACAGACCACA	GACCTGGTCC	CCAAAAGAAA	TGGAGGCAAT	AGGTTTTGAG	300
GGGCATGGGG	ACGGGGTTCA	GCCTCCAGGG	TCCTACACAC	AAATCAGTCA	GTGGCCCGAGA	360
AGACCCCCCT	CGGAATCGGA	GCAGGGAGGA	TGGGGAGTGT	GAGGGGTATC	CTTGATGCTT	420
GTGTGTCCCC	AACTTTCCAA	ATCCCCGCC	CCGCGATGGA	GAAGAAACCG	AGACAGAAGG	480
TGCAGGGCCC	ACTACCGCTT	CCTCCAGATG	AGCTCATGGG	TTTCTCCACC	AAGGAAGTTT	540
TCCGCTGGTT	GAATGATTCT	TTCCCCGCC	TCCTCTCGCC	CCAGGGACAT	ATAAAGGCAG	600
TTGTTGGCAC	ACCCAGCCAG	CAGACGCTCC	CTCAGCAAGG	ACAGCAGAGG	ACCAGCTAACG	660
AGGGAGAGAA	GCAACTACAG	ACCCCCCTG	AAAACAACCC	TCAGACGCCA	CATCCCCCTGA	720
CAAGCTGCCA	GGCAGGTTCT	CTTCCTCTCA	CATACTGACC	CACGGCTTCA	CCCTCTCTCC	780
CCTGGAAAGG	ACACCATGAG	CACTGAAAGC	ATGATCCGGG	ACGTGGAGCT	GGCCGAGGAG	840
GCGCTCCCCA	AGAAGACAGG	GGGGCCCCAG	GGCTCCAGGC	GGTGTGTTGTT	CCTCAGCCTC	900
TTCTCCTTCC	TGATCGTGGC	AGGCGCCACC	ACGCTCTTCT	GCCTGCTGCA	CTTGGAGTG	960
ATCGGCCCCC	AGAGGGAAAGA	GGTGAGTGC	TGGCCAGCCT	TCATCCACTC	TCCCACCCAA	1020
GGGGAAATGA	GAGACGCAAG	AGAGGGAGAG	AGATGGATG	GGTGAAAGAT	GTGCGCTGAT	1080
AGGGAGGGAT	GAGAGAGAAA	AAAACATGGA	GAAAGACGGG	GATGCAGAAA	GAGATGTGGC	1140
AAGAGATGGG	GAAGAGAGAG	AGAGAAAGAT	GGAGAGACAG	GATGTCTGGC	ACATGGAAGG	1200
TGCTCACTAA	GTGTGTATGG	AGTGAATGAA	TGAATGAATG	AATGAACAAG	CAGATATATA	1260
ATAAAGATAT	GGAGACAGAT	GTGGGGTGTG	AGAAGAGAGA	TGGGGAAAGA	AAACAGTGAT	1320
ATGAATAAAAG	ATGGTGAGAC	AGAAAGAGCG	GGAAATATGA	CAGCTAAGGA	GAGAGATGGG	1380
GGAGATAAGG	AGAGAAGAAG	ATAGGGTGT	TGGCACACAG	AAGACACTCA	GGGAAAGAGC	1440
TGTTGAATGC	TGGAAGGTGA	ATACACAGAT	GAATGGAGAG	AGAAAACAG	ACACCTCAGG	1500
GCTAAGAGCG	CAGGCCAGAC	AGGCAGCCAG	CTGTTCCCTCC	TTTAAGGGGT	ACTCCCTCGA	1560
TGTTAACCAT	TCTCCTTCTC	CCCAACAGTT	CCCCAGGGAC	CTCTCTCTAA	TCAGCCCTCT	1620
GGCCCAGGCA	GTCAGTAAGT	GTCTCCAAAC	CTCTTCCTA	ATTCTGGTT	TGGGTTTGGG	1680
GGTAGGGTTA	GTACCGGTAT	GGAAGCAGTG	GGGGAAATT	AAAGTTTGG	TCTGGGGGAA	1740
GGATGGATGG	AGGTGAAAGT	AGGGGGGTAT	TTTCTAGGAA	GTTTAAGGGT	CTCAGCTTTT	1800
TCTTTCTCT	CTCCTCTTCA	GGATCATCTT	CTCGAACCCC	GAGTGACAAG	CCTGTAGGCC	1860
ATGTTGTAGG	TAAGAGCTCT	GAGGATGTGT	CTTGGAAACTT	GGAGGGCTAG	GATTGGGGA	1920
TTGAAGCCCC	GCTGATGGTA	GGCAGAACTT	GGAGACAATG	TGAGAAGGAC	TCGCTGAGCT	1980
CAAGGGAAAGG	GTGGAGGAAC	AGCACAGGCC	TTAGTGGGAT	ACTCAGAACG	TCATGGCCAG	2040

GTGGGATGTG GGATGACAGA CAGAGAGGAC AGGAACCGGA TGTGGGTGG GCAGAGCTG 2100  
 AGGGCCAGGA TGTGGAGAGT GAACCGACAT GGCCACACTG ACTCTCCTCT CCCTCTCTCC 2160  
 CTCCCTCCAG CAAACCCTCA AGCTGAGGGG CAGCTCCAGT GGCTGAACCG CGGGGCCAAT 2220  
 GCCCTCTGG CCAATGGCGT GGAGCTGAGA GATAACCAGC TGGTGGTGCC ATCAGAGGGC 2280  
 CTGTACCTCA TCTACTCCCA GGTCTCTTC AAGGGCCAAG GCTGCCCTC CACCATGTG 2340  
 CTCCCTCACCC ACACCATCAG CCGCATCGCC GTCTCCTACC AGACCAAGGT CAACCTCCTC 2400  
 TCTGCCATCA AGAGCCCCTG CCAGAGGGAG ACCCCAGAGG GGGCTGAGGC CAAGCCCTGG 2460  
 TATGAGGCCA TCTATCTGGG AGGGGTCTTC CAGCTGGAGA AGGGTGACCG ACTCAGCGCT 2520  
 GAGATCAATC GGCCCGACTA TCTCGACTTT GCCGAGTCTG GGCAAGTCTA CTTGGGATC 2580  
 ATTGCCCTGT GAGGAGGACG AACATCCAAC CTTCCCAAAC GCCTCCCTG CCCCACATCCC 2640  
 TTTATTACCC CCTCCCTTCAG ACACCCCTCAA CCTCTTCTGG CTCAAAAAGA GAATTGGGGG 2700  
 CTTAGGGTCG GAACCCAAGC TTAGAACTTT AAGCAACAAG ACCACCACTT CGAACACTGG 2760  
 GATTCAAGGAA TGTGTGGCCT GCACAGTGA GTGCTGGCAA CCACAAAGAA TTCAAACCTGG 2820  
 GCCCTCCAGA ACTCACTGGG GCCTACAGCT TTGATCCCTG ACATCTGGAA TCTGGAGACC 2880  
 AGGGAGCCTT TGGTTCTGGC CAGAATGCTG CAGGACTTGA GAAGACCTCA CCTAGAAATT 2940  
 GACACAAGTG GACCTTAGGC CTTCCCTCTC CCAGATGTTT CCAGACTTCC TTGAGACACG 3000  
 GAGCCCCAGCC CTCCCCATGG AGCCAGCTCC CTCTATTTAT GTTTGCACCT GTGATTATTT 3060  
 ATTATTTATT TATTATTTAT TTATTTACAG ATGAATGTAT TTATTTGGGA GACCGGGGTA 3120  
 TCCTGGGGGA CCCAATGTAG GAGCTGCCCT GGCTCAGACA TGTTTCCGT GAAAACGGAG 3180  
 CTGAACAATA GGCTGTTCCC ATGTAGCCCC CTGGCCTCTG TGCCCTCTT TGATTATGTT 3240  
 TTTTAAATAA TTTATCTGAT TAAGTTGTCT AAACAATGCT GATTTGGTGA CCAACTGTCA 3300  
 CTCATTGCTG AGCCTCTGCT CCCCAGGGGA GTTGTGTCTG TAATGCCCT ACTATTCACT 3360  
 GGCGAGAAAT AAAGTTTGCT TAGAAAAGAA ACATGGTCTC CTTCTGGAA TTAATTCTGC 3420  
 ATCTGCCTCT TCTTGTGGGT GGGAAAGAAC TCCCTAAGTC CTCTCTCCAC AGGCTTTAAG 3480  
 ATCCCTCGGA CCCAGTCCCA TCCTTAGACT CCTAGGGCCC TGGAGACCCCT ACATAAAACAA 3540  
 AGCCCAACAG AATATTCCCC ATCCCCCAGG AAACAAGAGC CTGAACCTAA TTACCTCTCC 3600  
 CTCAGGGCAT GGGAAATTCC AACTCTGGGA ATTC 3634

(2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1997 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

GAGACAGAGT CTTGCTCTGT CCCCCAGGCT GGAATACAGT GGTGCGATCT TGACTCACTG 60  
 CAGCCTCCGC CTCCCAGGTT CAAATAATTC TCCAGCCTCA GCCTCCCGAG TAGCTGGGAC 120  
 TGCAGATGCG CACCAGCACG CCTGGCTAAT TTTTGTATTT ATTATAGAGA TGGGGTTTCA 180  
 CCATGTTGGC CAGCTGGTCT CAAACTCCTG ACCTCAAGTA ATCCGCCAAC CTCAGACTCC 240  
 CAAAGTGCCA GGATTACAGG TGTGAGCCAC TGCAACCAGGC CTGGAACAAT TTTAAATAA 300  
 TGTATTGGCT CTGCAAATGC AGCTTCAGAA CAAGTCCCTT AGCTGCCCC ACCCCACCC 360  
 AAGTCACCAC CCTTAAGCCT CACCCATGTG GAATTCTGAA ACTTCCTTTG TAGAAAACCTT 420  
 TGGAAAGGTGT CTGCCACATT GATCCTGGAA TGTGTGTTA TTTGGGGTTA TATAAATCTG 480  
 TTCTGTGGAA GCCACCTGAA GTCAGGAAGA GATGGAGGGC ATCCCTCAGG AGTGAGATGA 540  
 GACCTCATCA TACTGACTG TCCAGCATCA TCTCTGAGTA AGGGGACCAA AAAATTATC 600  
 TTCCAAACTA GGACACTTTC AAGAGTGGAA GGGGGATCCA TTAATATTTT CACCTGGACA 660  
 AGAGGCAAAAC ACCAGAAATGT CCCCGATGAA GGGGGATATAT AATGGACCTT CTTGATGTGA 720  
 AACCTGCCAG ATGGGCTGGA AAGTCCGTAT ACTGGGACAA GTATGATTTG AGTTGTTGG 780  
 GACAAGGACA GGGGTACAAG AGAAGGAAAT GGGCAAGAG AGAAGCCTGT ACTCAGCCAA 840  
 GGGTGCAGAG ATGTTATATA TGATTGCTCT TCAGGGAAACC GGGCCTCCAG CTCACACCCC 900  
 AGCTGCTCAA CCACCTCCTC TCTGAATTGA CTGTCCTTC TTTGGAACCTC TAGGCCTGAC 960  
 CCCACTCCCT GGCCCTCCCA GCCCACGATT CCCCTGACCC GACTCCCTTT CCCAGAACTC 1020  
 AGTCGCCTGA ACCCCCCAGCC TGTGGTTCTC TCCTAGGCCT CAGCCTTCC TGCCTTGAC 1080

TGAAACAGCA	GTATCTTCTA	AGCCCTGGGG	GCTTCCCCGG	GCCCCAGCCC	CGACCTAGAA	1140
CCCGCCCGCT	GCCTGCCACG	CTGCCACTGC	CGCTCCTCT	ATAAAGGGAC	CTGAGCGTCC	1200
GGGCCCAGGG	GCTCCGCACA	GCAGGGTGAGG	CTCTCCTGCC	CCATCTCCTT	GGGCTGCCCG	1260
TGCTTCGTGC	TTTGGACTAC	CGCCCAGCAG	TGTCCCTGCC	TCTGCCTGGG	CCTCGGTCCC	1320
TCCTGCACCT	GCTGCCTGGA	TCCCCGGCCT	GCCTGGGCCT	GGGCTGGTG	GGTTTGGTTT	1380
TGGTTTCCTT	CTCTGTCTCT	GACTCTCCAT	CTGTCAGTCT	CATTGTCTCT	GTCACACATT	1440
CTCTGTTCT	GCCATGATTC	CTCTCTGTC	CCTTCCTGTC	TCTCTCTGTC	TCCCTCTGCT	1500
CACCTGGGG	TTTCTCTGAC	TGCATCTTGT	CCCCCTCTCT	GTCGATCTCT	CTCTCGGGGG	1560
TCGGGGGGTG	CTCTCTCCCA	GGGCGGGGAGG	TCTGTCTTCC	GCCGCGTGCC	CCGCCCCGCT	1620
CACTGTCTCT	CTCTCTCTCT	CTCTTCTCT	GCAGGGTCTC	CCCATGACAC	CACCTGAACG	1680
TCTCTTCCTC	CCAAGGGTGT	GTGGCACACC	CCTACACCTC	CTCCTCTGCG	GGCTGCTGCT	1740
GGTTCTGCTG	CCTGGGGCCC	AGGTGAGGCA	GCAGGGAGAAT	GGGGGCTGCT	GGGGTGGCTC	1800
AGCCAAACCT	TGAGCCCTAG	AGCCCCCTC	AACTCTGTC	TCCCCTAGGG	GCTCCCTGGT	1860
GTTGGCCTCA	CACCTTCAGC	TGCCCAGACT	GCCCCGTAGC	ACCCCAAGAT	GCATCTTGCC	1920
CACAGCACCC	TCAAAACCTGC	TGCTCACCTC	ATTGGTAAAC	ATCCACCTGA	CCTCCCAGAC	1980
ATGTCCCCAC	CAGCTCT					1997

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10240 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

GAATTCCCCG	GATCAAAGTC	AGCATTAAAT	CCCAAGTTAG	GTTTGAGGC	TAAGTTCAAG	60
TTTGAGTCTA	ATGTCATTTC	AGCCTTGT	GGAGGGACTCA	GAGATTCAC	TAGTTTCTCC	120
GCAGAGACCA	CTGTAGAAC	TGCATTTCCC	TGAGTTTGG	GCACAAGACT	CCAGTCATCA	180
CCCCTCCAC	ACAGGGAAAG	CCCCAAACCA	ACTGCTGCC	TCCTCAAGAA	AGAAACCGAA	240
TTTCACACAA	CCTCCGAAAC	TAAGATTGAA	ACCAAGATTG	GCCCATCTCA	AGGCGCGTCC	300
TCCAGCACAT	TGAGAATGTC	GCTGATGGAG	CCTCGGCCA	GCTCTCGAGC	TTCCTTCCTT	360
TCTGTCTCTC	ATGTCTTCTC	ATCACTCCTT	CTCACCTTCC	CGTTTTGTC	CTGCAATGCC	420
CCCTTCTTCC	TCTCTCCTG	GGGTTTTCC	CTTTATTCT	CACTGTACCA	TTTTATATT	480
TAATAAAAGCC	GAGGTCTCCT	AGTCCATCAG	CTCCTACTGT	TGGAGAGGAG	GCAGAAAGAA	540
ACAGCAGGAC	GGCAAAGGGA	CTCCAGAGAA	AGAGACTCAG	AGGAAAGGCA	AGAAAACAGGG	600
ACCAAGAGAG	AGGCCAACAG	TGACACAAGA	CACAGTGAGG	TTAAAAGAAA	TAAGATGAGG	660
CCAAGATAGA	GACCAAGCTA	TTTAAAAGAG	CCATCTGTGG	CTACCTCTCT	TCGCCCATCG	720
CATCTGGTCA	GCCACCAAGA	TTTTGCCTAG	AAACGTTCT	CCTCTCCATT	CTCCTGCTGC	780
TGCTGCTGCT	GCTGCTGCTG	CTGCTGCTGC	TGCTGCTGCT	GCTGCTGCTG	CTGCCCTTAAT	840
ACGAATGCA	GCTCTGTCA	TCTCCTGCT	GGGTTGTTGC	AAAATCCTCC	TAACTGGTCT	900
CCACACTTCT	CATTTCCCCT	CCAGCCCCCC	ATCTCCATA	CTTCCATTTA	TTTATTTTGG	960
CCATGCCCAT	GGCATGTGGC	AGTTCCAGGG	GCCAGGGATC	AAACCTGTGC	CAATGCAGTG	1020
ACCGTGTCA	ATCCTTAACC	CACTGCACAC	AAGGCAACGC	CCCTCGAGTC	ATTCTCATT	1080
TTTAAATATA	CCAATTGAG	GGGGTCCCTC	TTTCACTTAA	AAATTTGGC	AGCTCCCTAT	1140
CATGATGAGA	AGGAATTCCA	AACCATT	CTTGTGTGCA	AACCCCTCAG	CATGTGTCT	1200
CAGCTTACTT	CCCAAGCCTC	ATCCCTGCTC	CTTCTACGTG	TACCCATGTG	TACATCTCCA	1260
CACACCATAT	ACTCTTTT	ACCTCCCATC	TTTGCACCTT	CTGTTCCCTC	TCTCTGCC	1320
TCACCATCTT	TTTGCTTTG	ATACTTAAAG	CCTCTCCCTC	AGGCCAGGTT	CAATGGCTTT	1380
TCTGTGGGCT	GCTTAAGCC	CACTGTCTG	GAACATTATCA	CATTTTATTT	TATTTGACTT	1440
TCTTTTTAGG	GGCGCACCCA	GCATATGGAG	ATTCCCAGGC	TAGGGATCTA	ATCGGAGCTG	1500
TATCTGCCAG	CCTGCCTGG	AGCCACAGCA	ACGTGGGATC	CGAGCCTGAG	GGGTTTGAT	1560
GTCCTGTGGC	ACAGAACGTTA	CATTCAGGCT	GTGCATGAAC	TATTTCTCT	GTTCTCCTCC	1620
CCCTGCTTGA	GGCCCTGCAG	CTTTGCCTCT	CATGCCCTGC	TGCTCTGACC	TATGACTTCT	1680
TTTTGTTGTC	ATTCCATCTC	TTAGTTTTC	TCTCTGTTCC	ACAAACATTT	ACTGAGCATC	1740
TACATGAGGC	ATTGAGGATA	CGGATGGAA	AGACAGTCCC	CTGACCTCTG	GGACCTCAA	1800
GACCAATTGT	GGAAGACTGG	TTGGTTATCA	GATAATTACA	ATGAAGTGTG	GGAGTCCCTG	1860

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANTS: Kipps, Thomas J.  
Sharma, Sanjai  
Cantwell, Mark
- (ii) TITLE OF INVENTION: NOVEL EXPRESSION VECTORS  
CONTAINING ACCESSORY  
MOLECULE LIGAND GENES AND  
THEIR USE FOR IMMUNO-  
MODULATION AND TREATMENT OF  
MALIGNANCIES
- (iii) NUMBER OF SEQUENCES: 44
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: Lyon & Lyon  
(B) STREET: 633 West Fifth Street  
Suite 4700  
(C) CITY: Los Angeles  
(D) STATE: California  
(E) COUNTRY: U.S.A.  
(F) ZIP: 90071-2066
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: 3.5" Diskette,  
1.44 Mb storage  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: IBM P.C. DOS 5.0  
(D) SOFTWARE: FastSeq Version 2.0
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: To Be Assigned  
(B) FILING DATE:  
(C) CLASSIFICATION:

050622-220430

TCATGGGTCA	GCAGGTAATG	AACCCAGTAA	ACGATCCATG	AGGATGCAGA	TTCAATCCCT	1920
GCGCTTGCTC	AGCGGGTTAA	GGATCCAGCG	TTCCCACAAG	CTGTGGTGT	GGTCGCAGAT	1980
GCGACTCAGA	TCTTCATTG	CTGTGGCTGT	GGTAGGCT	GGTGGCTACC	CCTAGCCTGG	2040
GAACCTCCAT	ATGCCCTCAGG	TGCGGCCCTA	AAAGACAAAA	AAAAAAAAGA	GAGAAACTTT	2100
TCTTTTCTT	AATGTGTAAC	CTACAAGCTA	AGTAAAAC	GGCTCCTATT	CCATAACGTT	2160
TGTATCATTT	TTCATACTAG	CCAAATACTA	GAAACAGGG	GTTCCCGTCG	TGGTGCAGCA	2220
GAAACAAATT	CGACTAGGAA	CCATGAGGTT	CGGGGTTCGA	TCCCTGGCCT	TGCTCAGTGG	2280
GTAAAGGATC	CGGCGTTGCC	GTGAGCTGTG	GTGTAGGTG	CAGATGTGGC	TGGATCTAG	2340
TGTTGCTGTG	GCTCTGGTGT	AGGCCGGCAG	CAACAGCTCT	GATTAGACTC	CTAGCCTGAG	2400
AACCTCCATA	AGCTGTGGCT	CGGGCCCTAT	AAAGACAAAA	AAAAAAAAGA	GGCCAATAC	2460
TAGAAACAAA	CCAAATGCC	ATCAACAGAA	GAATAGATAA	TTAATTGGG	GTATATGCAC	2520
ACAATAGCAT	CACACAATAA	CATGCACACA	ATAACATCAC	AATGAAAATAA	AAATTACTAC	2580
TGACAGACAC	AACCATAATAG	ATGAATTCA	CAAACACAAAC	AGCGAGAATA	AAAGCCAAGC	2640
ACAGATGAGT	TGTCTGTGTG	GATTCAATTTC	TATGAAGTTC	AAGCGCAGGA	AGAACTTAAT	2700
CTATAGTGAC	AGAGGTCAGA	GAGCAGTTGG	TTGTCTTTGG	CAGGTATGAA	CTGGGAGTGG	2760
GCATGAGAGA	ACTTTCTGGA	GACCTAAAAA	TATATTGGAC	TGGATGGTGG	CAACATGGCT	2820
ACAAGAAGAT	GGAAAAGTTC	CTCAGGCTGT	CCACTTGGGA	GACGGGCTTC	TCACGGGACC	2880
TAAGTTCTGC	ATCAGCAGAG	GGGGAAATCC	TTAATGATT	GACAATTACA	AAGTGTATTG	2940
GCTTTACCGA	TGTATTTCA	ACACAATCCC	TCTGCTGTCC	CCACCCCCACC	CTAGGTCAACC	3000
ACCCTTAAGC	TCCACCTGTG	TGGAATTCTG	AAGCCTCCCC	TGTAGAGAAC	TTTAGCAGTT	3060
GCCACGTTCT	TTTGATGCAG	GAACGTGTTG	TCTAGAGTTA	GACACATCTG	ATCTGTGGGG	3120
CCCACCCAAG	GTTGGGACAT	GGTGGGGGGC	GGCCTTCTGC	AGTGAGATGA	AACTCATTG	3180
TAGGTGATT	CGTGGCCTCA	TCCCTGAGTC	AGATCTTCCA	AATGAGGACA	CTTGGAGAG	3240
CAAAGGGGGG	CTCCCTGAAG	ATTTCTCCA	GGACAGCAGG	AACAAACAG	GATGTCCCAG	3300
GCAGGAGGGT	ATAGAAGGGG	ACTTGTGAT	ATGAATTCAG	CCAGATGACC	TGGAAAATAC	3360
ACAGACTGGG	ACAAGTGTGA	CTTGAGCCTC	TTGGGCCCCAG	GACAGGGGTA	CAGAGGAGGA	3420
AACGTGCACA	GAGAGAAGCC	CGTAATCAGC	CAAGGCTGCA	GAGGTGTTAT	ACATAATCGC	3480
TCTTCACGCA	ACCGGGCAAG	CAGCCCACGC	CCCAGCTGCA	CTCCATCTCC	TCCTCTGAAC	3540
TCACCGTCCC	TTCTCTGGAA	CTCCTAAGCC	TGACCCCGCT	CCCTGGCCCT	CCCAGCCCCAC	3600
GGTTCCCCCTG	ACCCCACTCC	CTTTCCCAGA	ACTCAGTCAT	CTGAGCCCCC	AGCTCTGCCTT	3660
CTCTCCTAGG	CCTCAGCCTT	TCCTGCCTTC	CGGTGAAACA	GCAGCATCTT	CTAAGCCCTG	3720
GGCTTCCCCA	GGCCCCAGCC	CCGGCCTAGA	ACCCGCCCCAG	CCGACCTGCC	CACGCTGCCA	3780
CTGCCGGCTT	CCTCTATAAAA	GGGACCCAGG	GCGCCCAGAA	AGGGGCCAC	AGGGGTCCCCG	3840
CACAGCAGGT	GAGACTCTCC	CACCCCATCT	CCTAGGGCTG	TCCGGGTGCT	GGACTCCCCC	3900
CTCACTTCGG	TCCCTCCGCC	CGCTCCCTGG	CCTTCTGCCC	CCTCCTGCCAT	CTTCACCCCG	3960
GCCTGGGCCT	TGGTGGGTTT	GGTTTTGGTT	TGTTCTCTCT	GATTCTTTAT	CTGTCAGGCT	4020
CTTTCTAGCT	CTCACACACT	CTGATCCCTC	TCTGTTCCCT	TCCCACATCT	GTTCCTCTCT	4080
GGGTCTCCCC	CTGCTCACCT	CGGGATTTC	CTGAGTGCCT	CTGGTCCCCCT	TCTCTGTCTG	4140
GCGCCCCGTC	TCTTGTCTCT	CGGGGGTGGCT	GTCTCCGAGG	GCAGGAGGCC	TTCTTCCGCCA	4200
GGTCCCCCGC	CCCGCTCACT	GTCTCTCTCC	CCCCACAGGT	TTTCCCCATG	ACACCACCTG	4260
GACGCCCTCA	CCTCCGGAGG	GTGTGCAGCA	CCCCCATCCT	CCTCCTCCTG	GGGCTGCTGC	4320
TGGCCCTGCC	CCCCGAGGCC	CAGGTGAGGC	AGCAGGAGAG	CGGGCCGTGG	GGGCAGCCTT	4380
CGCCAACCTT	GGGCCTCAGA	GCCTCTCTGA	CGCTCTTCTC	CCCTAGGGGC	TCCCTGGCGT	4440
CGGCCTCCCCA	CCCTCAGCTG	CACAGCCTGC	CCATCAGCAC	CCCCCAAAGC	ACTTGGCCAG	4500
AGGCACCCCTC	AAACCTGCCG	CTCACCTCGT	TGGTAAACAT	CCACCTGGCC	TCCCAGACCT	4560
GTAGCCCCCA	GTCCTCCTCC	TATGCCCTG	CTTCAGGGAC	TGAAGCATCC	CTCCCCCCCCA	4620
TCTCCCCCCC	CCCCCTAAAT	GGAGGCATCC	CACTCCCGAC	TCCCCTCCAA	CCATCCCCCA	4680
GGAACCTAGT	CCAGCACCTG	CTTCCTCAGG	GATTGAGACC	TCCGACCCCC	AGGTCTTGA	4740
CTCCCACCCC	CTCTGGCTCT	TCCTAGGAGA	CCCCAGCACC	CCGGACTCAC	TGCGCTGGAG	4800
AGCGAACACG	GATCGTGCCT	TCCTCCGCCA	TGGCTTCTTG	CTGAGCAACA	ACTCCCTGCT	4860
GGTCCCCACC	AGTGGCCTCT	ACTTTGTCTA	CTCCCAAGTC	GTCTTCTCCG	GGGAAGGCTG	4920
CTTCCCCAAG	GCCACCCCCA	CCCCCTCTCA	CCTGGCCCAC	GAGGTCCAGC	TCTTCTCCTC	4980
CCAGTACCCC	TTCCACGTGC	CGCTCCTCAG	CGCTCAGAAG	TCCGTGTGCC	CCGGGCCACA	5040
GGGACCTTGG	GTGCGCTCTG	TGTACCAGGG	GGCTGTGTT	CTGCTCACCC	AGGGAGATCA	5100
GCTGTCCACA	CACACAGACG	GCACCCCCCA	CCTGCTCCTC	AGCCCCAGTA	GCCTTCTCTT	5160
TGGAGCCTTC	GCTCTATAGA	AGAATCCAGA	AAGAAAAAAA	TTGGTTTCAA	GGCCTTCTCC	5220
CCTTTTCACC	TCCCTTATGA	CCACTTCGGA	GGTCACCGCG	CCTCTCTCT	GACAATTTC	5280
AACAGTCTCA	TCTTCCCCCA	CGCTCAGCAC	CTGGAGCTTC	TGTAGAAGGA	ATTCTAGGCA	5340
CCTCGGGGGG	ACTGGAACCA	CCCCGGATGC	TCTGCTGAGG	ATCTGAATGC	CCGGCTGGAG	5400
CCCTTCCCCCT	GTCCTGCCCG	TCTAGGGGCC	CTCGTCCAGG	ACGTGGAAGG	GAAGCTGACC	5460

CATGAGGGAC	TTTGAACCGGA	TGACCCGGAGC	GGTGTGGGGG	GGTTATTTAT	GAAGGGGAAA	5520
ATTAAATTAT	TTATTTATGG	AGGATGGAGA	GAAGGGAAATC	ACAGAGGGAT	GTCAGAACAG	5580
TGTGACACAT	GTGCCCAAGA	GATAAAAGTGA	CAGAAGGCAT	GGGCTCCAGA	TGACCCGGCC	5640
AGAGAGGGCA	AAGTGGCTCA	GGAAAGGGCT	GCTTGACTGG	AGGCTCATGA	GGAGACGGCT	5700
GACCCTCGAT	GAAACCCAAT	AAAGCTCTTT	TCTCTGAAAT	GCTGTCTGCT	CGTATCTGTC	5760
ACTCGGGAGG	GGAGAATTCT	CCAGATGTCT	CTAAGGAGTG	GAGGGAGGAC	AGGAATCAGA	5820
GGGGACGGGA	GCTGTGGGTG	TGTGATGAGG	CTTAAGGGGC	TCAGGTGAGA	GATGGCGGCC	5880
TCAGGGTGAG	GGCAGCCAGA	CCCCTGCAGG	AGAACAGAT	GGTTCCTCTG	AGAAGACAAA	5940
GGAAGAGATG	CAGGGCCAAG	GTCTTGAGAA	CCGAGGTCTGG	GGGTCGCCCTG	GCAGATATGG	6000
CCACAGGTAG	AGGGACAGAG	GAATAGGGGT	GACAGGAGGC	TTCCCGGGAG	AAGGGAACAC	6060
ACTGAGGGGT	GTTCGGGATT	CTGAGGGAGG	AGCACGGGGA	CGCCCTGGGA	GACATGCCGT	6120
CCAGGGCCAT	GAGGAGTGGG	AGAGCCTCTG	AGGCTAGCGG	CTGGAGATAC	AGGGACATT	6180
GAGGAGACAC	GGTCATGGCC	AGGAGCCGCG	AGGGCCTGGA	CAGTCTCTAG	GAATCTCGAA	6240
GAAGCAGGAA	TTCTTTGAGG	ATACGTGGCC	ACACAAAGGG	AGGCTGAGGT	GTGGGACTT	6300
CATGCAGAAG	TCAGGGCCTC	ACATTCCTT	GBAAGCCGAG	ACTGAAACCA	GCAGCAGAGT	6360
TTTGGTGAGT	TCCCTGTCA	GTGAAAGGAG	AAGGCCGCC	ATGGTGGGTT	TGTGAATTCC	6420
CAGCCTGGCT	TCCCTCTCCCT	CTGGGCTGT	CCCAGGCCTG	TTCCCTGCCGT	CCTCCCCCAG	6480
CCCGTGTAGG	GCCTCCAGCT	GCCCTCTCC	CAGCTCCTCT	TCCCTCCAGG	AGACGAAACA	6540
TGGGTCTCAG	CACCCAGCGC	GGTGTCTGT	AGTTTTCTC	TCCATTAAGA	ACTCAGCTTT	6600
CTGAAGCTCC	TCCCATTCT	AGTTCTACCC	CTACCTGAGC	CCTGTTCGGA	AATCAGAGAG	6660
AAATAGAAGT	CATCCCCAA	AGAAAAGGAA	TTTGTCCCCC	AAAGAAACAG	AACCTGTCCC	6720
CCAAAGAAAT	GGAAACAATG	GGAAATGGGA	GGCAGGGGGG	ACCTGGGGTC	CAGCCTCCAG	6780
GGTCCTACAC	ACAGAGCAGT	AACTGGCCCA	GCAAGCCAC	CTCAGGATCC	GGGCAGGGAG	6840
GGTAGGAAGT	ATCCCTGATG	CCTGGGTGTC	CCCAACTTTC	CAAACCGCCG	CCCCCGCTAT	6900
GGAGATGAAA	CTAAGACAGA	AGGTGCAAGGG	CCCGCTACCG	CTTCTCTCCAG	ATGAGCTCAT	6960
GGGTTCTCC	ACCAAGGAAG	TTTCCGCTG	GTTGAAAGAG	AGCCTCTCCC	CGCCCTCTTC	7020
TCACCCAGAG	CGTATAATG	CAGCTGTTT	CACACCCAGC	CAGCAGAACG	TCCCAGAGTG	7080
AGGACACCAG	GGGACCAGCC	AGGAGAGAGA	CAAGCCATCT	CCAGGACCCC	CTAGAAAATAA	7140
CCTCTCAGAA	GACACACCCC	CGAACAGGCA	GGCGGACGAC	TCTCTCCCTC	TCACACGCTG	7200
CCCCGGGGCG	CCACCATCTC	CCAGCTGGAC	CTGAGCCCC	CTGAAAAAGA	CACCATGAGC	7260
ACTGAGAGCA	TGATCCGAGA	CGTGGAGCTG	GGGGAGGAGG	CGCTCGCCAA	GAAGGCCGGG	7320
GGCCCCCAGG	GCTCCAGGAG	GTGCGCTGTG	CTCAGCCTCT	TCTCCTCTCT	CCTGGTCGCA	7380
GGAGCCACCA	CGCTCTTCTG	CCTACTGCAC	TCGAGGTTA	TCGGCCCCCA	GAAGGAAGAG	7440
GTGAGGCCCT	GGCCAGCCTT	GGCTCATTCT	CCCACCCGGA	GAGAAATGGG	GAAGAAAGAG	7500
GGCCAGAGAC	GAGCTGGGGG	AAAGAAGTGT	GCTGATGGGG	AGTGTGGGA	GGAAATCATG	7560
GAGAAAGATG	GGGAGGCAGA	AGGAGACGTG	GAGAGAGATG	GGGGGAGAGA	GAGAAGGATG	7620
GAGAGAAATC	CGGTGGCCCG	GCCCTTGGAA	ATGCTCTCTA	AATATTGTT	GCACGAATGA	7680
GTGAGTAAGC	AGGGACACCG	ATATAAAGAG	AGATGAGTAG	ACAGACAAGG	GGTGTGGTAG	7740
AAAGATAGGG	AAAAAAACAAG	TGATCTGGAT	AAAGATAGTG	AGACAGGAAG	AGGTAGAGGA	7800
GATAGGAAAG	AGAGATAAGG	AGAGAAGAAG	GAAGCGTGGG	TGTCTGGCAC	GTGGAAGGCA	7860
CTCAATGAAG	GAGTTGTTGA	ATGGATGGGT	GGATGAGAAA	ATGGATGAGT	GGAGAGAAAA	7920
AACTAGACAT	CAGGGCAGAG	AGTACAAGCT	AGAGAACGAG	GTGGCTGTTT	TCCCTTCAGA	7980
GGGGACTTAT	TCAAATCTAA	TTAACCTTC	TTCTTCTCCC	CAACAGTTTC	CAGCTGGCCC	8040
CTTGAGCATC	AACCCTCTGG	CCCAAGGACT	CAGTAAGTAT	CTCTAAAACC	TGTCTCTCAG	8100
TTCTGAGCTT	GGACAGGGGT	GGGGTTAGTG	CTGGGGTGG	AGGAAGAAGG	GAAATTAGG	8160
GTCTGGGTTT	GGCGGGGGGA	ATGCAGGTCA	AAAGTAGTGAG	ATATTCTG	GGAACTCTGA	8220
GGGTCTCATC	TTTTCTTCTC	CTCTTCTC	CTCAGGATCA	TCGCTCTCAA	CCTCAGATAA	8280
CCCCGTCGCC	CACGTTGTAG	GTAAGAGTTC	TGAGGATGTG	TCTGGGGGAT	GAAGAAATAG	8340
GCAGGACAGA	GAGGGATAGG	ATTGGGGGC	TGAAGCCAGG	CTGAGGGTAG	CCAGAGCTTG	8400
GAGATAGTAT	GAGGAGGACT	CGCTGAGCTC	CAGGGGAGGA	TGGGGGATAC	TCAGAACITG	8460
AGGAGGATAC	TCGGAACACTC	ATGGACAGAT	GGGATGTGGG	AAGACAGACC	GAGGGGACAG	8520
GAACCGGATG	TGGGGGGCGG	GCAGAACTCG	AGGGCCAGGA	TGTGGAGAGT	GGAACTGACA	8580
GGGTCAACT	GACTCACCCC	TCCCTCTT	TCTCTCCCT	CCAGCCAATG	TCAAAGCCGA	8640
GGGACAGCTC	CAATGGCAGA	GTGGGTATGC	CAATGCCCTC	CTGGCCAACG	GCGTGAAGCT	8700
GAAAGACAAC	CAGCTGGTGG	TGCCGACAGA	TGGGCTGTAC	CTCATCTACT	CCCAGGTCCT	8760
CTTCAGGGC	CAAGGCTGCC	CTTCCACCAA	CGTTTCCCTC	ACTCACACCA	TCAGCCGCAT	8820
CGCCGTCCTCC	TACCAGACCA	AGGTCAACCT	CCTCTCTGCC	ATCAAGAGCC	CTTGCCAGAG	8880
GGAGACCCCC	GAGGGGGCCG	AGGCCAAGCC	CTGGTACGAA	CCCACCTTAC	TGGGAGGGGT	8940
CTTCCAGCTG	GAGAAGGATG	ATCGACTCAG	TGCCGAGATC	AACCTGCCCG	ACTATCTGGA	9000
TTTGCTGAA	TCTGGGCAGG	TCTATTGTTG	GATCATTGCC	CTGTGAGGGGG	GCAGGACATC	9060

CGTTCCCTCC	CCTGTCCATC	CCTTTATTAT	TTTACTCCTT	CAGACCCCT	CACGTCCCTTC	9120
TGGTTTAGAA	AGAGAATGAG	GGGCTGGGA	CTGGGCTCCA	AGCTTAAAAC	TTAAACAAC	9180
AACAGCAACA	CTTAGAAATC	AGGGATTCA	GGATGTGTGG	CCTGGACAAC	CAGGCAC	9240
CCACCACCAA	GAATTGGAAC	TGGGGCTTCC	AGACTCGCTG	GGGTCTTGG	GTTGGATT	9300
CTGGATGCAA	CCTGGGACAT	CTGGAATGTG	GCTGCCAGGG	AAGCTGGGT	TCCAATCGGA	9360
ATACTTCAGA	ACATTCCCTG	AGAAGATTTC	ACCTCAATCT	TGATGACTTT	TTAGGCTTCC	9420
CTTTCTTCCA	ATTTTCCAGA	CTTCCCTGGG	ATGGGGAGCC	CAGCCCCAAA	CCCCACAGGC	9480
CAGCTCCCTC	TTATTATAT	TTGCACTTGG	CATTATTATT	TATTTATTTA	TTTATTATTT	9540
ATTTACTAGT	GAATGTATT	ATTCA	GAGGAGG	GCGAGGTGTC	CTGGGAGACC	9600
GCTGCCTTGG	TTCAGATGTG	TTTCTGTGA	AAACGGAGCT	GAAC	TGTAGG	9660
CTGGCCTCCT	AGCCTCTGTG	CCTCCTTTG	CTTATGTTT	AAAAACAAA	TATTTATCTG	9720
ATCGAGTTGT	CTAAATAATG	CTGATTTGGT	GACTAACTTG	TCGCTACATC	GCTGAACCTC	9780
TGCTCCCCAG	GGGAGTTGTG	TCTGTAACCG	CCCTACTGGT	CAGTGGCGAG	AAATAAAAGC	9840
GTGCTTAGAA	AAGAAATCTG	GCCTCTTCT	GCGACTGAAT	TCTGCATCTC	CTTGGGGGG	9900
TGAGGCTGCT	CCCCAAAATT	CTTTCTCCAC	CGGGCTTAGG	ATTCCCTGGG	CTTCAC	9960
GAGCTGGAC	TGCCTGGCTC	AGGAGCCTCT	GCAAGAAACA	AAGCCCAGCC	AAACAGGTCC	10020
CTCCCCTAAC	AAAGGAACCT	GAAGGTAATT	ACCTCTCCCT	CAGGGTGTGG	GAATTCCAA	10080
GTCTGGGAAT	TCCTATCCAG	CTGGGGAAAGT	CTGCAGTGCA	GGTGAGACTT	CCGGCTGAAA	10140
GAGCCAGGGA	GCGGCCAGAT	GCTCAGGTAC	CTGAACCAGA	GCCAAGGGAC	TTCCAGACAG	10200
TGAGGCAACT	GGGCTCCAAA	TAACCTGATC	CGGGGAATT			10240

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1644 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

CCTCAGCGAG	GACAGCAAGG	GA	CTAGCCAG	GAGGGAGAAC	AGAAACTCCA	GAACATCCTG	60
GAAATAGCTC	CCAGAAAAGC	AAGCAGCAA	CCAGGCAGGT	TCTGTCCCTT	TCAC	TCAC	120
GCCCAAGGGG	CCACATCTCC	CTCCAGAAAA	GACACCATGA	GCACAGAAAG	CATGATCCGC		180
GACGTGGAAC	TGGCAGAAGA	GGCA	CTCCCC	AAAAGATGG	GGGGCTTCCA	GAAC	240
CGGTGCCTAT	GTCTCAGCCT	CTTCTCATTC	CTGCTTGTGG	CAGGGGCCAC	CACGCTCTTC		300
TGTCTACTGA	ACTTCGGGGT	GATCGGTCCC	CAAAGGGATG	AGAAGTCCC	AAATGGCCTC		360
CCTCTCATCA	GTTCTATGGC	CCAGACCC	TCAC	TCAGAT	CATCTCTCA	AAATTCGAGT	420
GACAAGCCTG	TAGCCCACGT	CGTAGCAAAC	CACCAAGTGG	AGGAGCAGCT	GGAGTGGCTG		480
AGCCAGCGCG	CCAACGCCCT	CCTGGCCAAC	GGCATGGATC	TCAAAGACAA	CCAAC	AGTGTG	540
GTGCCAGCCG	ATGGGTTGTA	CCTTGCTAC	TCCCAGGTT	TCTTCAAGGG	ACAAGGCTGC		600
CCCGACTACG	TGCTCCTCAC	CCACACC	AGCCGATTG	CTATCTCATA	CCAGGAGAAA		660
GTCAACCTCC	TCTCTGCCGT	CAAGAGCCC	TGCCCCAAGG	ACACCCCTGA	GGGGGCTGAG		720
CTCAAACCC	GGTATGAGCC	CATATAC	GGAGGGAGTCT	TCCAGCTGGA	GAAGGGGGAC		780
CAACTCAGCG	CTGAGGTCAA	TCTGCCAAG	TACTTAGACT	TTGCGGAGTC	CGGGCAGGTC		840
TACTTGGAG	TCATTGCTCT	GTGAAGGGAA	TGGGTGTTCA	TCCATTCTCT	ACCCAGCCCC		900
CACTCTGACC	CCTTACTCT	GACCC	CTT	TTGCTACTC	CTCAGAGCCC	CCAGTCTGTG	960
TCCTTCTAAC	TTAGAAAGGG	GATTATGGCT	CAGAGTCAA	CTCTGTGCTC	AGAGCTTCA		1020
ACAACACTC	AGAAAACCAA	GATGCTGGG	CAGTGAC	GACTGTGGC	CTCTCATGCA		1080
CCACCATCAA	GGACTCAAAT	GGGCTTCCG	AATTCA	AGCCTCGAAT	GTCCATT	CCT	1140
GAGTTCTGCA	AAGGGAGAGT	GGTCAGGTT	CCTCTGTCTC	AGAATGAGGC	TGGATAAGAT		1200
CTCAGGCCTT	CCTACCTTCA	GACCTTCCA	GACTCTCCC	TGAGGTGCAA	TGCACAGCCT		1260
TCCTCACAGA	GCCAGCCCC	CTCTATT	ATTGCACTT	ATTATTTATT	ATTATTTAT		1320
TATTTATTTA	TTTGCTTATG	AATGATT	TTTGGAAAGGC	CGGGGTGTC	TGGAGGACCC		1380
AGTGTGGGAA	GCTGTCTTCA	GACAGACATG	TTTCTGTGA	AAACGGAGCT	GAGCTGTCCC		1440
CACCTGGCCT	CTCTACCTTG	TTGCCTCC	TTTCTGTAT	GTTTAAAACA	AAATATT	TAT	1500
CTAACCAAT	TGTCTTAATA	ACGCTGATT	GGTGACCAGG	CTGTCGCTAC	ATCA	CTGAAC	1560

CTCTGCTCCC CACGGGAGCC GTGACTGTAA TTGCCCTACA GTCAATTGAG AGAAATAAAG  
ATCGCTTAAA ATAAAAAACC CCCC 1620  
1644

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1890 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

AAACAGAGAG AGATAGAGAA AGAGAAAGAC AGAGGTGTTT CCCTTAGCTA TGGAAACTCT	60
ATAAGAGAGA TCCAGCTTGC CTCCTCTTGA GCAGTCAGCA ACAGGGTCCC GTCCTTGACAA	120
CCTCAGCCTC TACAGGACTG AGAAGAAGTA AAACCGTTTG CTGGGGCTGG CCTGACTCAC	180
CAGCTGCCAT GCAGCAGCCC TTCAATTACC CATATCCCCA GATCTACTGG GTGGACAGCA	240
GTGCCAGCTC TCCCTGGGCC CCTCCAGGCA CAGTTCTTCC CTGTCCAACC TCTGTGCCCA	300
GAAGGCCTGG TCAAAGGAGG CCACCACAC CACCGCCACC GCCACCACTA CCACCTCCGC	360
CGCCGCCGCC ACCACTGCCT CCACTACCCGC TGCCACCCCT GAAGAAGAGA GGGAAACCACA	420
GCACAGGCCT GTGTCCTCTT GTGATGTTTT TCATGGTTCT GGTTGCCCTG GTAGGATTGG	480
GCCTGGGGAT GTTTCAGCTC TTCCACCTAC AGAAGGGAGCT GGCAGAACCTC CGAGAGTCTA	540
CCAGCCAGAT GCACACAGCA TCATCTTGG AGAAGCAAAT AGGCCACCCC AGTCCACCCC	600
CTGAAAAAAA GGAGCTGAGG AAAGTGGCCC ATTAAACAGG CAAGTCCAAC TCAAGGTCCA	660
TGCCTCTGGA ATGGGAAGAC ACCTATGGAA TTGTCCTGCT TTCTGGAGTG AAGTATAAGA	720
AGGGTGGCCT TGTGATCAAT GAAACTGGGC TGTACTTTGT ATATTCCAAA GTATACTTCC	780
GGGGTCAATC TTGCAACAAC CTGCCCCTGA GCCACAAGGT CTACATGAGG AACTCTAAGT	840
ATCCCCAGGA TCTGGTGATG ATGGAGGGGA AGATGATGAG CTACTGCAC ACTGGGCAGA	900
TGTGGGCCCG CAGCAGCTAC CTGGGGGCAG TGTCAATCT TACCACTGCT GATCATTTAT	960
ATGTCAACGT ATCTGAGCTC TCTCTGGTCA ATTTGAGGA ATCTCAGACG TTTTCGGCT	1020
TATATAAGCT CTAAGAGAAG CACTTTGGGA TTCTTCCAT TATGATTCTT TGTTACAGGC	1080
ACCGAGAACAT TTGTATTCAAG TGAGGGCTTT CTTACATGCA TTTGAGGTCA AGTAAGAAGA	1140
CATGAACCAA GTGGACCTTG AGACCACAGG GTTCAAAATG TCTGTAGCTC CTCAACTCAC	1200
CTAATGTTA TGAGCCAGAC AAATGGAGGA ATATGACGGA AGAACATAGA ACTCTGGCT	1260
GCCATGTGAA GAGGGAGAAG CATGAAAAAG CAGCTACCCA GGTGTTCTAC ACTCATCTTA	1320
GTGCCTGAGA GTATTAGGC AGATTGAAAA GGACACCTTT TAACTCACCT CTCAAGGTGG	1380
GCCTTGCTAC CTCAAGGGGG ACTGTCTTTC AGATACATGG TTGTGACCTG AGGATTTAAG	1440
GGATGGAAAA GGAAGACTAG AGGCTTGAT AATAAGCTAA AGAGGCTGAA AGAGGCCAAT	1500
GCCCCACTGG CAGCATCTTC ACTTCTAAAT GCATATCCTG AGCCATCGGT GAAACTAAC	1560
GATAAGCAAG AGAGATGTTT TGGGGACTCA TTCATTCCCT AACACAGCAT GTGTATTTCC	1620
AGTCCAATT GTAGGGGTGT GTGTGTGTGT GTGTATGACT AAAGAGAGAA	1680
TGTAGATATT GTGAAGTACA TATTAGGAAA ATATGGGTTG CATTGGTCA AGATTTGAA	1740
TGCTTCTGAA CAATCAACTC TAATAGTGCT TAAAAATCAT TGATTGTCAG CTACTAATGA	1800
TGTTTCCTTA TAATATAATA AATATTTATG TAGATGTGCA TTTTGTGAA ATGAAAACAT	1860
GTAATAAAAA GTATATGTTA GGATACAAAT	1890

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1541 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

GGGTGTCTCA	CAGAGAAGCA	AAGAGAAGAG	AACAGGAGAA	ATGGTGTTC	CCTTGACTGC	60
GGAAACTTA	TAAAGAAAAC	TTAGCTTCTC	TGGAGCAGTC	AGCGTCAGAG	TTCTGTCCTT	120
GACACCTGAG	TCTCCTCCAC	AAGGCTGTGA	GAAGGAAACC	CTTCCTGGG	GCTGGGTGCC	180
ATGCAGCAGC	CCATGAATT	CCCAGTCCC	CAGATCTCT	GGGTAGACAG	CAGTGCCACT	240
TCATCTTGGG	CTCCTCCAGG	GTCAGTTTT	CCCTGTCCAT	CTTGTGGGCC	TAGAGGGCCG	300
GACCAAAGGA	GACGCCACC	TCCACCACCA	CCTGTGTAC	CACTACCACC	GCCATCACAA	360
CCACTCCCAC	TGCCGCCACT	GACCCCTCTA	AAGAAGAAGG	ACCACAAACAC	AAATCTGTGG	420
CTACCGGTGG	TATTTTCAT	GGTCTGGTG	GCTCTGGTG	GAATGGGATT	AGGAATGTAT	480
CAGCTCTTCC	ACCTGCAGAA	GGAACGGCA	GAACCTCCGTG	AGTTCACCAA	CCAAAGCCTT	540
AAAGTATCAT	CTTTGAAAAA	GCAAATAGCC	AACCCCCAGTA	CACCCCTCTGA	AAAAAAAGAG	600
CCGAGGAGTG	TGGCCCATTT	AACAGGGAAC	CCCCACTCAA	GGTCCATCCC	TCTGGAATGG	660
GAAGACACAT	ATGGAACCGC	TCTGATCTCT	GGAGTGAAGT	ATAAGAAAGG	TGGCCTTGTG	720
ATCAACGAAA	CTGGGTTGTA	CTTCGTGTAT	TCCAAAGTAT	ACTTCCGGGG	TCAGTCTTGC	780
AACAACCAGC	CCCTAAACCA	CAAGGTCTAT	ATGAGGAACT	CTAAGTATCC	TGAGGATCTG	840
GTGCTATGG	AGGAGAAGAG	GTTGAACCTAC	TGCACTACTG	GCCAGATATG	GGCCCACAGC	900
AGCTACCTGG	GGGCAGTATT	CAATCTTAC	AGTGTGACC	ATTTATATGT	CAACATATCT	960
CAACTCTCTC	TGATCAATT	TGAGGAATCT	AAGACCTTT	TCGGCTTGT	TAAGCTTTAA	1020
AAGAAAAAGC	ATTTAAAAT	GATCTACTAT	TCTTATCAT	GGGCACCAGG	AATATTGTCT	1080
TGAATGAGAG	TCTCTTAAAG	ACCTATTGAG	ATTAATTAAG	ACTACATGAG	CCACAAAGAC	1140
CTCATGACCG	CAAGGTCCAA	CAGGTCACT	ATCCTTCATT	TTCTCGAGGT	CCATGGAGTG	1200
GTCCTTAATG	CCTGCATCAT	GAGCCAGATG	GAAGGAGGTC	TGTGACTGAG	GGACATAAAAG	1260
CTTGGGCTG	CTGTGTAGCA	ATGCAGAGGC	ACAGAGAAAG	AACTGTCTGA	TGTTAAATGG	1320
CCAAGAGAAT	TTTAACCATT	GAAGAAGACA	CCTTACACT	CACTCCAGG	GTGGGTCTAC	1380
TTACTACCTC	ACAGAGGCCG	TTTTGAGAC	ATAGTTGTGG	TATGAATATA	CAAGGGTGAG	1440
AAAGGAGGCT	CATTTGACTG	ATAAGCTAGA	GACTGAAAAA	AAGACAGTGT	CTCATTGGCA	1500
CCATCTTTAC	TGTTACCTGA	TGTTTCTGA	GCCGACCTT	G		1541

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 888 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

GGCTGGTCCC	CTGACAGGTT	GAAGCAAGTA	GACGCCAGG	AGCCCCGGGA	GGGGGCTGCA	60
TTTCCTTCC	TTCCTTCTCG	GCAGCGCTCC	GCGCCCCCAT	CGCCCCCTCCT	GCGCTAGCGG	120
AGGTGATCGC	CGCGCGATG	CCGGAGGAGG	GTTGGGCTG	CTCGGTGCGG	CGCAGGCCCT	180
ATGGGTGCGT	CCTGCGGCT	GCTTGGTCC	CATTGGTCGC	GGGCTTGGTG	ATCTGCCTCG	240
TGGTGTGCAT	CCAGCGCTTC	GCACAGGCTC	AGCAGCAGCT	GCCGCTCGAG	TCACTTGGGT	300
GGGACGTAGC	TGAGCTGCAG	CTGAATCACA	CAGGACCTCA	GCAGGACCCC	AGGCTATACT	360
GGCAGGGGGG	CCCAGCACTG	GGCGCTCCT	TCCTGCATGG	ACCAGAGCTG	GACAAGGGC	420
AGCTACGTAT	CCATCGTGAT	GGCATCTACA	TGGTACACAT	CCAGGTGACG	CTGGCCATCT	480
GCTCCTCCAC	GACGGCCTCC	AGGCACCACC	CCACCAACCT	GGCCGTGGGA	ATCTGCTCTC	540
CCGCCTCCCG	TAGCATCAGC	CTGCTGCGTC	TCAGCTTCCA	CCAAGGTTGT	ACCATTGCCT	600
CCCAGCGCT	GACGCCCTG	GCCCGAGGGG	ACACACTCTG	CACCAACCTC	ACTGGGACAC	660
TTTTGCCCTC	CCGAAACACT	GATGAGACCT	TCTTTGGAGT	GCAGTGGGTG	CGCCCCCTGAC	720
CACTGCTGCT	GATTAGGGTT	TTTTAAATT	TATTTTATT	TATTTAAGTT	CAAGAGAAAA	780
AGTGTACACA	CAGGGGCCAC	CCGGGGTTGG	GGTGGGAGTG	TGGTGGGGGG	TAGTGGTGGC	840
AGGACAAGAG	AAGGCATTGA	GCTTTTCTT	TCATTTCT	ATTAACAA		888

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1906 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

CCAAGTCACA	TGATTCAAGGA	TTCAGGGGGA	GAATCCCTCT	TGGAACAGAG	ATGGGCCAG	60
AACTGAATCA	GATGAAGAGA	GATAAGGTGT	GATGTGGGGA	AGACTATATA	AAGAATGGAC	120
CCAGGGCTGC	AGCAAGCACT	CAACGGAATG	GCCCCCTCCTG	GAGACACAGC	CATGCATGTG	180
CCGGCGGGCT	CCGTGGCCAG	CCACCTGGGG	ACCACGAGCC	GCAGCTATTT	CTATTTGACC	240
ACAGCCACTC	TGGCTCTGTG	CCTTGTCTTC	ACGGTGGCCA	CTATTATGGT	GTTGGTCGTT	300
CAGAGGACGG	ACTCCATTCC	CAACTCACCT	GACAAACGTCC	CCCTCAAAGG	AGGAAATTGC	360
TCAGAACGACC	TCTTATGTAT	CCTGAAAAGA	GCTCCATTCA	AGAAGTCATG	GGCCTACCTC	420
CAAGTGGCAA	AGCATCTAAA	CAAACACCAAG	TTGTCTTGGA	ACAAAGATGG	CATTCTCCAT	480
GGAGTCAGAT	ATCAGGATGG	GAATCTGGTG	ATCCAATTCC	CTGGTTTGT	CTTCATCATT	540
TGCCAAGTGC	AGTTTCTTGT	ACAATGCCCA	AATAATTCTG	TCGATCTGAA	GTTGGAGCTT	600
CTCATCAACA	AGCATATCAA	AAAACAGGCC	CTGGTGACAG	TGTGTGAGTC	TGGAATGCAA	660
ACGAAACACG	TATACCAGAA	TCTCTCTCAA	TTCTTGCTGG	ATTACCTGCA	GGTCAACACCC	720
ACCATATCAG	TCAATGTGGA	TACATTCCAG	TACATAGATA	CAAGCACCTT	TCCTCTTGAG	780
AATGTGTTGT	CCATCTTCTT	ATACAGTAAT	TCAGACTGAA	CAGTTCTCT	TGGCCTTCAG	840
GAAGAAAGCG	CCTCTCTACC	ATACAGTATT	TCATCCCTCC	AAACACTTGG	GCAAAAGAA	900
AACTTTAGAC	CAAGACAAAC	TACACAGGGT	ATTTAAATAGT	ATACTTCTCC	TTCTGTCTCT	960
TGGAAAGATA	CAGCTCCAGG	GTTAAAAAGA	GAGTTTTAG	TGAAGTATCT	TTCAAGATAGC	1020
AGGCAGGGAA	GCAATGTAGT	GTGGTGGGCA	GAGCCCCACA	CAGAATCAGA	AGGGATGAAT	1080
GGATGTCCCCA	GCCCAACCAC	TAATTCACTG	TATGGTCTTG	ATCTATTCT	TCTGTTTTGA	1140
GAGCCTCCAG	TTAAAATGGG	GCTTCAGTAC	CAGAGCAGCT	AGCAACTCTG	CCCTAATGGG	1200
AAATGAAGGG	GAGCTGGGTG	TGAGTGTTTA	CACTGTGCC	TTCACGGGAT	ACTTCTTTTA	1260
TCTGCAGATG	GCCTAATGCT	TAGTTGTCCA	AGTCGCGATC	AAGGACTCTC	TCACACAGGA	1320
AACTTCCCTA	TACTGGCAGA	TACACTTGTG	ACTGAACCAT	GCCCAGTTA	TGCCTGTCTG	1380
ACTGTCACTC	TGGCACTAGG	AGGCTGATCT	TGTACTCCAT	ATGACCCAC	CCCTAGGAAC	1440
CCCCAGGGAA	AACCAGGCTC	GGACAGCCCC	CTGTTCTGA	GATGGAAAGC	ACAAATTAA	1500
TACACCACCA	CAATGGAAAA	CAAGTTCAA	GACTTTACT	TACAGATCCT	GGACAGAAAG	1560
GGCATAATGA	GTCTGAAGGG	CAGTCCTCCT	TCTCCAGGTT	ACATGAGGCA	GGATAAAGAA	1620
GTCAGACAGA	GACAGCAAGA	CAGTTAACAA	CGTAGGTAAA	GAAATAGGGT	GTGGTCACTC	1680
TCAATTCACT	GGCAAATGCC	TGAATGGTCT	GTCTGAAGGA	AGCAACAGAG	AAGTGGGAA	1740
TCCAGTCTGC	TAGGCAGGAA	AGATGCCTCT	AAGTTCTTGT	CTCTGGCCAG	AGGTGTGGTA	1800
TAGAACCCAGA	AACCCATATC	AAGGGTGACT	AAGCCCGGCT	TCCGGTATGA	GAAATTAAAC	1860
TTGTATACAA	AATGGTTGCC	AAGGCAACAT	AAAATTATAA	GAATTC		1906

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1619 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

GTCATGGAAT	ACGCCCTCTGA	CGCTTCACTG	GACCCCGAAG	CCCCGTGGCC	TCCCGCGCCC	60
CGCGCTCGCG	CCTGCCGCGT	ACTGCCTTGG	GCCCTGGTCG	CGGGGCTGCT	GCTGCTGCTG	120
CTGCTCGCTG	CCGCCCTGCGC	CGTCTTCCCT	GCCTGCCCC	GGGCCGTGTC	CGGGGCTCGC	180
GCCTCGCCCC	GCTCCCGGGC	CAGCCCGAGA	CTCCCGAGG	GTCCCGAGCT	TTCGCCCCGAC	240

GATCCCGCCG GCCTCTTGG CCTGCAGCAG GGCATGTTG CGCAGCTGGT GGCCAAAAT 300  
 GTTCTGCTGA TCGATGGGCC CCTGAGCTGG TACAGTGACC CAGGCCTGGC AGGCGTGTCC 360  
 CTGACGGGGG GCCTGAGCTA CAAAGAGGAC ACGAAGGAGC TGGTGGTGGC CAAGGCTGGA 420  
 GTCTACTATG TCTTCTTCA ACTAGAGCTG CGGCGCGTGG TGGCCGGCGA GGGCTCAGGC 480  
 TCCGTTTCAC TTGCGCTGCA CCTGCAGCCA CTGCGCTCTG CTGCTGGGC CGCCGCCCTG 540  
 GCTTTGACCG TGGACCTGCC ACCCGCCTCC TCCGAGGCTC GGAACCTGGC CTTCGGTTTC 600  
 CAGGGCCGCT TGCTGCACCT GAGTGCCTGG CAGGCCTGG GCGTCCATCT TCACACTGAG 660  
 GCCAGGGCAC GCCATGCCTG GCAGCTTAC CAGGGCGCCA CAGTCTGGG ACTCTCCGG 720  
 GTGACCCCCG AAATCCCAGC CGGACTCCCT TCACCGAGGT CGGAATAACG CCCAGCCTGG 780  
 GTGCAGCCCCA CCTGGACAGA GTCCGAATCC TACTCCATCC TTCATGGAGA CCCCTGGTGC 840  
 TGGGTCCCTG CTGCTTTCTC TACCTCAAGG GGCTGGCAG GGGTCCCTGC TGCTGACCTC 900  
 CCCTTGAGGA CCCTCCTCAC CCACTCCTTC CCCAAGTTGG ACCTTGATAT TTATTCTGAG 960  
 CCTGAGCTCA GATAATATAT TATATATATT ATATATATAT ATATATTCT ATTAAAGAG 1020  
 GATCCTGAGT TTGTGAATGG ACTTTTTTAG AGGAGTTGTT TTGGGGGGG GGTCTTCGAC 1080  
 ATTGCCGAGG CTGGTCTTGA ACTCCTGGAC TTAGACGATC CTCCTGCCTC AGCCTCCCAA 1140  
 GCAACTGGGA TTCATCCTTT CTATTAATTCT ATTGTACTTA TTTGCCTATT TGTGTGTATT 1200  
 GAGCATCTGT AATGTGCCAG CATTGTGCC AGGCTAGGG GCTATAGAAA CATCTAGAAA 1260  
 TAGACTGAAA GAAAATCTGA GTTATGGTAA TACGTGAGGA ATTTAAAGAC TCATCCCCAG 1320  
 CCTCCACCTC CTGTGTGATA CTTGGGGCT AGCTTTTTTC TTTCTTCTT TTTTTGAGA 1380  
 TGGTCTTGTGTT CTGTCACCCA GGCTAGAACG CAGCGGTGCA ATCATGAGTC AATGCAGCCT 1440  
 CCAGCCTCGA CCTCCCGAGG CTCAGGTGAT CCTCCCATCT CAGCCTCTCG AGTAGCTGGG 1500  
 ACCACAGTTG TGTGCCACCA CACTTGGCTA ACTTTTTAAT TTTTTGCGG AGACGGTATT 1560  
 GCTATGTTGC CAAGGTTGTT TACATGCCAG TACAATTAT AATAAACACT CATTTCCTC 1619

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1239 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

AGCCTATAAA GCACGGGCAC TGGCGGGAGA CGTGCACTGA CCGACCGTGG TAATGGACCA 60  
 GCACACACTT GATGTGGAGG ATACCGCGGA TGCCAGACAT CCAGCAGGTA CTTCGTGCC 120  
 CTCGGATGCG GCGCTCCTCA GAGATACCGG GCTCCTCGCG GACGCTGCAGC TCCTCTCAGA 180  
 TACTGTGCGC CCCACAAATG CCGCGCTCCC CACGGATGCT GCCTACCCCTG CGGTTAATGT 240  
 TCGGGATCGC GAGGCCGCGT GGCGCCTGC ACTGAACCTTC TGTTCCCGCC ACCCAAAGCT 300  
 CTATGGCCTA GTCGCTTGG TTTTGCTGCT TCTGATCGCC GCCTGTGTTG CTATCTTCAC 360  
 CCGCACCGAG CCTCGGCCAG CGCTCACAAAT CACCACCTCG CCCAACCTGG GTACCCGAGA 420  
 GAATAATGCA GACCAGGTCA CCCCTGTTTC CCACATTGGC TGCCCCAACAA CTACACAAACA 480  
 GGGCTCTCCT GTGTCGCCA AGCTACTGGC TAAAAAACAA GCATCGTTGT GCAATACAAAC 540  
 TCTGAACCTGG CACAGCCAAG ATGGAGCTGG GAGCTCATAC CTATCTCAAG GTCTGAGGTA 600  
 CGAAGAAGAC AAAAAGGAGT TGGTGGTAGA CAGTCCCGGG CTCTACTACG TATTTTTGGA 660  
 ACTGAAGCTC AGTCCAACAT TCACAAACAC AGGCCACAAG GTGCAGGGCT GGGTCTCTCT 720  
 TGTTTGCAA GCAAAGCTC AGGTAGATGA CTTTGACAAAC TTGGCCCTGA CAGTGGAACT 780  
 GTTCCCTTGC TCCATGGAGA ACAAGTTAGT GGACCGTTCC TGGAGTCAC TGTGCTCCT 840  
 GAAGGCTGGC CACCGCCTCA GTGTGGGTCT GAGGGCTTAT CTGCATGGAG CCCAGGATGC 900  
 ATACAGAGAC TGGGAGCTGT CTTATCCCAA CACCACCAAG TTTGGACTCT TTCTTGTGAA 960  
 ACCCGACAAAC CCATGGGAAT GAGAACTATAC CTTCTTGTGA CTCCTAGTTG CTAAGTCCTC 1020  
 AAGCTGCTAT GTTTTATGGG GTCTGAGCAG GGGTCCCTTC CATGACTTTG TCTTGTCTTT 1080  
 AACTGGACTT GGTATTTATT CTGAGCATAG CTCAGACAAG ACTTTATATA ATTCACTAGA 1140  
 TAGCATTAGT AAACTGCTGG GCAGCTGCTA GATAAAAAAA AATTCTAAA TCAAAGTTA 1200  
 TATTTATATT AATATATAAA AATAAACATG TG TTTGTAAAT 1239

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 606 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

ATGATCGAAA CATAACAACCA AACTTCTCCC CGATCTGCGG CCACTGGACT GCCCATCAGC	60
ATGAAAATT TTATGTATTT ACTTACTGTT TTTCTTATCA CCCAGATGAT TGGGTCAAGCA	120
CTTTTGCTG TGTATCGCTT CGCACAGGCT TTTGAAATGC AAAAAGGTGA TCAGAATCCT	180
CAAATTGCGG CACATGTCAT AAGTGAGGCC AGCAGTAAAA CAACATCTGT GTTACAGTGG	240
GCTGAAAAG GATACTACAC CATGAGCAAC AACTTGGTAA CCCTGGAAAA TGGGAAACAG	300
CTGACCGTTA AAAGACAAGG ACTCTATTAT ATCTATGCC AAGTCACCTT CTGTTCCAAT	360
CGGGAAGCTT CGAGTCAGC TCCATTATAA GCCAGCCTCT GCCTAAAGTC CCCCCGTAGA	420
TTCGAGAGAA TCTTACTCAG AGCTGCAAAT ACCCACAGTT CCGCCAAACC TTGCGGGCAA	480
CAATCCATTCACTTGGGAGG AGTATTGAA TTGCAACCAG GTGCTTCGGT GTTGTCAAT	540
GTGACTGATC CAAGCCAAGT GAGCCATGGC ACTGGCTTCA CGTCCTTGG CTTACTCAAA	600
CTCTGA	606

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 783 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

ATGATCGAAA CATAACAACCA AACTTCTCCC CGATCTGCGG CCACTGGACT GCCCATCAGC	60
ATGAAAATT TTATGTATTT ACTTACTGTT TTTCTTATCA CCCAGATGAT TGGGTCAAGCA	120
CTTTTGCTG TGTATCTTCA TAGAAGATTG GATAAGGTG AAGAGGAAGT AAACCTTCAT	180
GAAGATTTG TATTCTAAA AAAGCTAAAG AGATGCAACA AAGGAGAAGG ATCTTTATCC	240
TTGCTGAAC GTGAGGGAGAT GAGAAGGCAA TTTGAAGACC TTGTCAAGGA TATAACGTTA	300
AACAAAGAAG AGAAAAAAAGA AAACAGCTT GAAATGCAAA AAGGTGATCA GAATCCTCAA	360
ATTGCGGCAC ATGTCATAAG TGAGGCCAGC AGTAAACAA CATCTGTGTT ACAGTGGGCT	420
AAAAAAGGAT ACTACACCAT GAGCAACAAC TTGTTAACCC TGGAAAATGG GAAACAGCTG	480
ACCGTTAAA GACAAGGACT CTATTATATC TATGCCAAG TCACCTTCTG TTCCAATCGG	540
GAAGCTTCGA GTCAAGCTCC ATTATAGCC AGCCTCTGCC TAAAGTCCCC CGGTAGATTC	600
GAGAGAAATCT TACTCAGAGC TGCAAATACC CACAGTCCG CCAAACCTTG CGGGCAACAA	660
TCCATTCACT TGGGAGGAGT ATTGAATTG CAACCAGGTG CTTCGGTGTG TGTCATGTG	720
ACTGATCCAA GCCAAGTGAG CCATGGCACT GGCTTCACGT CCTTGGCTT ACTCAAATC	780
TGA	783

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 558 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

DECODED BY NCBI

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

CTGCTGCACT	TCGGGGTAAT	CGGCCCCAG	AGGAAGAGC	AGTCCCCAGG	TGGCCCCCTCC	60
ATCAACAGCC	CTCTGGTTCA	AACACTCAGG	TCCTCTTCTC	AAGCCTCAAG	TAACAAGCCG	120
GTAGCCCACG	TTGTAGCCGA	CATCAACTCT	CCGGGGCAGC	TCCGGTGGTG	GGACTCGTAT	180
GCCAATGCC	TCATGGCCAA	CGGTGTGAAG	CTGGAAGACA	ACCAGCTGGT	GGTGCCTGCT	240
GACGGGCTTT	ACCTCATCTA	CTCACAGGTC	CTCTTCAGGG	GCCAAGGCTG	CCCTTCCACC	300
CCCTTGTTC	TCACCCCACAC	CATCAGCCGC	ATTGCGATCT	CCTACCAGAC	CAAGGTCAAC	360
ATCCGTCTG	CCATCAAGAG	CCCTTGCCAC	AGGGAGACCC	CAGAGTGGGC	TGAGGGCCAAG	420
CCCTGGTACG	AACCCATCTA	CCAGGGAGGA	GTCTTCCAGC	TGGAGAAGGG	AGATCGCCTC	480
AGTGCTGAGA	TCAACCTGCC	GGACTACCTG	GACTATGCCG	AGTCCGGGCA	GGTCTACTTT	540
GGGATCATTG	CCCTGTGA					558

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1783 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

CAAGTCACAT	GATCCAGGAT	GCAGGGAAA	ATCCTCTTG	GAACAGAGCT	GGGTACAGAA	60
CCGAATCAGA	TGAGGAGAGA	TAAGGTGTGA	TGTGGGACAG	ACTATATAAA	GCATGGAGCC	120
AGGGCTGCAA	CAAGCAGGCA	GCTGTGGGGC	TCCTTCCCCT	GACCCAGCCA	TGCAAGGTGCA	180
GCCCCGGCTCG	GTAGCCAGCC	CCTGGAGAAG	CACGAGGCC	TGGAGAAGCA	CAAGTCGCAG	240
CTACTTCTAC	CTCAGCACCA	CCGCACTGGT	GTGCCCTGTT	GTGGCAGTGG	CGATCATTCT	300
GGTACTGGTA	GTCCAGAAA	AGGACTCCAC	TCCAAATACA	ACTGAGAAGG	CCCCCCTTAA	360
AGGAGGAAAT	TGCTCAGAGG	ATCTCTCTG	TACCTGAAA	AGTACTCCAT	CCAAGAAGTC	420
ATGGGCCTAC	CTCCAAGTGT	CAAAGCATCT	CAACAATACC	AAACTGTCAT	GGAACGAAGA	480
TGGCACCATC	CACGGACTCA	TATACCAGGA	CGGGAACCTG	ATAGTCCAAAT	TCCCTGGCTT	540
GTACTTCATC	GTTCGCAAC	TGCAGTTCT	CGTGCAGTGC	TCAAATCATT	CTGTGGACCT	600
GACATTGCAG	CTCCTCATCA	ATTCCAAGAT	AAAAAAGCAG	ACGTTGGTAA	CAGTGTGTGA	660
GTCTGGAGTT	CAGAGTAAGA	ACATCTACCA	GAATCTCTCT	CAGTTTTGTC	TGCATTACTT	720
ACAGGTCAAC	TCTACCATAT	CAGTCAGGGT	GGATAATTTC	CAGTATGTGG	ATACAAACAC	780
TTTCCCTCTT	GATAATGTGC	TATCCGTCTT	CTTATATAGT	AGCTCAGACT	GAATAGTTGT	840
TCTTAACCTT	TATGAAAATG	CTGTCATCA	TACAGTACTT	CATCTGTCCA	AACATGGGCC	900
AAAGAAAATA	TTAGGACAAC	TCAAACAAAG	CATGTGAGTT	AGTGCACCTTC	TCTTCTGTGTC	960
CTTGGAAAAA	ATACAAACCC	AGGATTTAGA	AAGTGGAGTC	TCCTTCAGAT	GCACAAACAG	1020
GAAAGAATGT	GATATGTGCA	CAGAGACCTA	CTTGGGCACT	AGAAGGGGTG	TGAGTTGTCC	1080
CAGTATAACC	ACTAATTCA	TGACCTTGAG	CCATTTTCC	TTCCCCCTGG	AACTTGGGGT	1140
CTGAATCTGG	AAAAGTAGGA	GATGAGATT	ACATTTCCCC	AATATTTCT	TCAACTCAGA	1200
AGACGAGACT	GTGGAGCTGA	GCTCCCTACA	CAGATGAAGG	CCTCCCATGG	CATGAGGAAA	1260
ATGATGGTAC	CAGTAATGTC	TGTCTGACTG	TCATCTCAGC	AAGTCCTAAG	GACTTCCATG	1320
CTGCCTTGT	GAAAGATACT	CTAACCTCTT	GTAATGGGCA	AGTGATCCT	GTCTCTCACT	1380
GAGGGGAGTA	GCTGCTGCCA	TCTCCTGAGA	CATACATGGA	GACATTTCT	GCCCAAATTC	1440
CATTCTGTGT	GCAGTTTTA	AGTATTCCCC	AAAAGTTCT	TGACAATGAG	AACTTTGAAT	1500
GTGGGAAGAG	CTTCTGGACA	GCAAACATTA	ACAGCTTCTC	CTGACCAGAG	AGACCATGCA	1560
AGCTTGGTCT	TAGACCCATC	AAGCTTGAGG	TTTCTACATT	GTGGGAGACA	GACTTTGAC	1620
AAACCATTG	AGTTGATGTC	TGGGCCCTG	GGAGTTCTCC	TTCAGTAAGG	AGAGCAAGCC	1680
GTTCTAGTGC	TGTGTAGAG	GATGGAGTAA	AATAGACACT	TTTCTGAAGG	AAAGGAGAAC	1740
AAAGTTCCAG	AAAAAGGCTA	GAAAATGTTT	AAAAAGAAAAA	AAA		1783

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1047 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

AGAGAGCGCT	GGGAGCCGGA	GGGGAGCGCA	GCGAGTTTG	GCCAGTGGTC	GTGCAGTCCA	60
AGGGGCTGGA	TGGCATGCTG	GACCCAAGCT	CAGCTCAGCG	TCCGGACCCA	ATAACAGTTT	120
TACCAAGGGA	GCAGCTTCT	ATCCTGGCCA	CACTGAGGTG	CATAGCGTAA	TGTCATGTT	180
GTTCTACACT	CTGATCACAG	CTTTCTGTAT	CGGCATACAG	GCGGAACCAC	ACTCAGAGAG	240
CAATGTCCCT	GCAGGACACAA	CCATCCCCCA	AGTCCACTGG	ACTAAACTTC	AGCATTCCCT	300
TGACACTGCC	CTTCGCAGAG	CCCGCAGCGC	CCCGCAGCGC	GCGATAGCTG	CACCGCTGGC	360
GGGGCAGACC	CGCAACATTA	CTGTGGACCC	CAGGCTGTT	AAAAAGCGGC	GACTCCGTT	420
ACCCCGTGTG	CTGTTTAGCA	CCCAGCCTCC	CCGTGAAGCT	GCAGACACTC	AGGATCTGGA	480
CTTCGAGGTC	GGTGGTGTG	CCCCCTCAA	CAGGACTCAC	AGGAGCAAGC	GGTCATCATC	540
CCATCCCAC	TTCCACAGGG	GCGAATTCTC	GGTGTGTGAC	AGTGTCAAGCG	TGTGGTTGG	600
GGATAAGACC	ACCGCCACAG	ACATCAAGGG	CAAGGAGGTG	ATGGTGTGTT	GAGAGGTGAA	660
CATTAACAAC	AGTGTATTCA	AACAGTACTT	TTTGAGACC	AAGTGCAGGG	ACCCAAATCC	720
CGTTGACAGC	GGGTGCCGGG	GCATTGACTC	AAAGCACTGG	AACTCATATT	GTACCACGAC	780
TCACACCTTT	GTCAAGCGC	TGACCATGGA	TGGCAAGCAG	GCTGCCTGGC	GGTTTATCCG	840
GATAGATACG	GCCTGTGTG	GTGTGCTCAG	CAGGAAGGCT	GTGAGAAGAG	CCTGACCTGC	900
CGACACGCTC	CCTCCCCCTG	CCCCTCTAC	ACTCTCCTGG	GCCCCCTCCCT	ACCTCAACCT	960
GTAAAATTATT	TTAAATTATA	AGGACTGCAT	GGTAATTAT	AGTTTATACA	GTTTAAAGA	1020
ATCATTATTT	ATTAATTTT	TGGAAGC				1047

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1176 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

GAGCGCCTGG	AGCCGGAGGG	GAGCGCATCG	AGTGACTTTG	GAGCTGGCCT	TATATTTGGA	60
TCTCCCGGGC	AGCTTTTGG	AAACTCCTAG	TGAACATGCT	GTGCCTCAAG	CCAGTGAAT	120
TAGGCTCCCT	GGAGGTGGGA	CACGGGCAGC	ATGGTGGAGT	TTTGGCCTGT	GGTCGTGCAG	180
TCCAGGGGGC	TGGATGGCAT	GCTGGACCCA	AGCTCACCTC	AGTGTCTGGG	CCCAATAAAG	240
GTTTTGCCAA	GGACCGAGCT	TTCTATACG	GCCGAGTGA	GGTGCATAGC	GTATATGTCCA	300
TGTTGTTCTA	CACTCTGATC	ACTGCGTTT	TGATCGGCGT	ACAGGCAGAA	CCGTACACAG	360
ATAGCAATGT	CCCAGAAGGA	GACTCTGTCC	CTGAAGCCCA	CTGGACTAAA	CTTCAGCATT	420
CCCTTGACAC	AGCCCTCCGC	AGAGCCCGCA	GTGCCCTAC	TGCACCAATA	GCTGCCGAG	480
TGACAGGGCA	GACCCGCAAC	ATCACTGTAG	ACCCCAGACT	GTGTTAAGAAA	CGGAGACTCC	540
ACTCACCCCG	TGTGCTGTT	AGCACCCAGC	CTCCACCCAC	CTCTTCAGAC	ACTCTGGATC	600
TAGACTTCCA	GGCCCATGGT	ACAATCCCTT	TCAACAGGAC	TCACCGGAGC	AAGCGCTCAT	660
CCACCCACCC	AGTCTTCCAC	ATGGGGAGT	TCTCAGTGTG	TGACAGTGT	AGTGTGTGGG	720
TTGGGAGATAA	GACCACAGCC	ACAGACATCA	AGGGCAAGGA	GGTGACAGTG	CTGGCCGAGG	780
TGAACATTAAC	CAACAGTGT	TTCAAGACAGT	ACTTTTTG	GACCAAGTGC	CGAGCCTCCA	840
ATCCTGTTGA	GAGTGGGTGC	CGGGGCATCG	ACTCCAAACA	CTGGAACCTCA	TACTGCACCA	900
CGACTCACAC	CTTCGTCAAG	GCGTTGACAA	CAGATGAGAA	GCAGGCTGCC	TGGAGGTTCA	960
TCCGGATAGA	CACAGCCTGT	GTGTGTGTG	TCAGCAGGAA	GGCTACAAGA	AGAGGCTGAC	1020

TTGCCTGCAG CCCCTTCCC CACCTGCCCT CTCCACACTC TCTTGGGCCCT CTCCCTACCT	1080
CAGCCTGTAA ATTATTTAA ATTATAAGGA CTGCATGATA ATTTATCGTT TATACAATT	1140
TAAAGACATT ATTTATTAAA TTTCAAAGC ATCCTG	1176

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1623 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

TCAGAGTCCT GTCCTTGACA CTTCACTCTC CACAAGACTG AGAGGAGGAA ACCCTTCC	60
GGGGCTGGGT GCCATGCAGC AGCCCGTGAA TTACCCATGT CCCCCAGATCT ACTGGGTAGA	120
CAGCAGTGCC ACTTCTCCTT GGGCTCCTCC AGGGTCAGTT TTTTCTTGTG CATCCTCTGG	180
GCCTAGAGGG CCAGGACAAA GGAGACCACC GCCTCCACCA CCACCTCCAT CACCACTACC	240
ACCGCCTTCC CAACCACCCC CGCTGCCTCC ACTAAGCCCT CTAAAGAAGA AGGACAACAT	300
AGAGCTGTGG CTACCGGTGA TATTTTCAAT GGTGCTGGTG GCTCTGGTG GAATGGGGTT	360
AGGAATGTAT CAACTCTTTC ATCTACAGAA GGAACCTGGCA GAACTCCGTG AGTCACCAA	420
CCACAGCCTT AGAGTATCAT CTTTGAAAA GCAAATAGCC AACCCCGAGCA CACCCCTCTGA	480
AACCAAAAG CCAAGGAGTG TGGCCCACCTT AACAGGGAAC CCCCGCTCAA GGTCCATCCC	540
TCTGGAATGG GAAGACACAT ATGGAACCTGC TTTGATCTCT GGAGTGAAGT ATAAGAAAGG	600
CGGCCTTGTG ATCAATGAGG CTGGGTTGTA CTTGTATAT TCCAAAGTAT ACTTCCGGGG	660
TCAGTCTTGC AACAGCCAGC CCCTAACGCCA CAAGGTCTAT ATGAGGAAC TTAAGTATCC	720
TGGGGATCTG GTGCTAATGG AGGAGAAGAA GTTGAATTAC TGCACTACTG GCCAGATATG	780
GGCCCACAGC AGCTACCTAG GGGCAGTATT TAATCTTACCG TTGCTGACC ATTATATGT	840
CAACATATCT CAACTCTCTC TGATCAATT TGAGGAATCT AAGACCTTT TTGCTTATA	900
TAAGCTTTAA AGGAAAAAGC ATTTTAGAAT GATCTATTAT TCTTTATCAT GGATGCCAGG	960
AATATTGTCT TCAATGAGAG TCTTCTTAAG ACCAATTGAG CCACAAAGAC CACAAGGTCC	1020
ACAGGTCAG CTACCCCTCA TTTCTAGAG GTCCATGGAG TGGCTCTTAA TGCTGCATC	1080
ATGAGCCAGA TGGGAAGAAG ACTGTTCTG AGGAACATAA AGTTTGGC TGCTGTGTGG	1140
CAATGCAGAG GCAAAGAGAA GGAACGTCT GATGTTAAAT GGCCAAGAGC ATTTAGCCA	1200
TTGAAGAAAA AAAAACCTT TAAACTCACC TTCCAGGGTG GGTCTACTTG CTACCTCACA	1260
GGAGGCCGTC TTTAGACAC ATGGTTGTGG TATGACTATA CAAGGGTGAG AAAGGATGCT	1320
AGGTTTCATG GATAAGCTAG AGACTGAAAA AAGCCAGTGT CCCATTGGCA TCATCTTTAT	1380
TTTTAAGCTGA TGTTTCTGA GCCCACCTT GATGCTAACCA GAGAAATAAG AGGGGTGTTT	1440
GAGGCACAAG TCATTCTCTA CATAGCATGT GTACCTCCAG TGCAATGATG TCTGTGTGTG	1500
TTTTTATGTA TGAGAGTAGA GCGATTCTAA AGAGTCACAT GAGTACAACG CGTACATTAC	1560
GGAGTACATA TTAGAAACGT ATGTGTTACA TTTGATGCTA GAATATCTGA ATGTTCTTG	1620
CTA	1623

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GTAAAGCTTT TCAGTCAGCA TGATAGAA

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

GTTTCTAGAT CAGAGTTG A GTAAGCC

27

(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CCAAGACTAG TTAACACAGC ATGATCGAAA

30

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

CCAATGCGGC CGCACTCAGA ATTCAACCTG

30

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 972 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

TCTAGACTCA GGACTGAGAA GAAGTAAAAC CGTTTGCTGG GGCTGGCTGT ACTCACCAAGC  
TGCCTATGCAG CAGCCCTTCA ATTACCCATA TCCCCAGATC TACTGGGTGG ACAGCAGTGC  
CAGCTCTCCC TGGGCCCTC CAGGCACAGT TCTTCCCTGT CCAACCTCTG TGCCCGAGAAG

60

120

180

GCCTGGTCAA	AGGAGGCCAC	CACCACCACC	GCCACCGCCA	CCACTACCAC	CTCCGCCGCC	240
GCCGCCACCA	CTGCCTCCAC	TACCGCTGCC	ACCCCTGAAG	AAGAGAGGGA	ACCACAGCAC	300
AGGCCTGTGT	CTCCTTGTGA	TGTTTTTCAT	GGTTCTGGTT	GCCTTGGTAG	GATTGGGCCT	360
GGGGATGTTT	CAGCTCTTCC	ACCTACAGAA	GGAGCTGGCA	GAACCTCCGAG	AGTCTACCAG	420
CCAGATGCAC	ACAGCATCAT	CTTGGAGAA	GCAAATAGGC	CACCCCAGTC	CACCCCCTGA	480
AAAAAAGGAG	CTGAGGAAAG	TGGCCCATT	AACAGGCAAG	TCCAACTCAA	GGTCATGCC	540
TCTGGAATGG	GAAGACACCT	ATGGAATTGT	CCTGCTTTCT	GGAGTGAAGT	ATAAGAAGGG	600
TGGCCTTGTG	ATCAATGAAA	CTGGGCTGTA	CTTTGTATAT	TCCAAAGTAT	ACTTCCGGGG	660
TCAATCTTGC	AACAACCTGC	CCCTGAGCCA	CAAGGTCTAC	ATGAGGAACT	CTAAGTATCC	720
CCAGGATCTG	GTGATGATGG	AGGGGAAGAT	GATGAGCTAC	TGCACTACTG	GGCAGATGTG	780
GGCCCGCAGC	AGCTACCTGG	GGGCAGTGT	CAATCTTACC	AGTGCTGATC	ATTTATATGT	840
CAAACGTATCT	GAGCTCTCTC	TGGTCAATT	TGAGGAATCT	CAGACGTTT	TCGGCTTATA	900
TAAGCTCTAA	GAGAACACT	TTGGGATTCT	TTCCATTATG	ATTCTTTGTT	ACAGGCACCG	960
AGATGTTCTA	GA					972

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 885 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

ATGCAGCAGC	CCATGAATTA	CCCATGTCCC	CAGATCTTCT	GGGTAGACAG	CAGTGCCACT	60
TCATCTTGGG	CTCCTCCAGG	GTCAGTTTT	CCCTGTCCAT	CTTGTGGGCC	TAGAGGGCCG	120
GACCAAAGGA	GACCGCCACC	TCCACCACCA	CCTGTGTAC	CACTACCACC	GCCATCACAA	180
CCACTCCCAC	TGCGGCCACT	GACCCCTCTA	AAGAAGAAGG	ACCACAAACAC	AAATCTGTGG	240
CTACCGGTGG	TATTTTCAT	GGTTCTGGTG	GCTCTGGTTG	GAATGGGATT	AGGAATGTAT	300
CAGCTCTTCC	ACCTGCAGAA	GGAACTGGCA	GAACCTCCGTG	AGTTCACCAA	CCAAAGCCTT	360
AAAGTATCAT	CTTTGAAAAA	GCAAATAGCC	AACCCAGTA	CACCTCTGA	AAAAAAAGAG	420
CCGAGGAGTG	TGGCCCATT	AACAGGGAAC	CCCCACTCAA	GGTCATCCC	TCTGGAATGG	480
GAAGACACAT	ATGGAACCGC	TCTGATCTCT	GGAGTGAAGT	ATAAGAAAGG	TGGCCTTGTG	540
ATCAACGAAG	CTGGGTTGTA	CTTCGTATAT	TCCAAAGTAT	ACTTCCGGGG	TCAGTCTTGC	600
AACAACCAGC	CCCTAAACCA	CAAGGTCTAT	ATGAGGAACT	CTAAGTATCC	TGGGGATCTG	660
GTGCTAATGG	AGGAGAAGAG	GTTGAAC	TGCACTACTG	GACAGATATG	GGCCACAGC	720
AGCTACCTGG	GGGCAGTATT	CAATCTTACC	AGTGCTGACC	ATTTATATGT	CAACATATCT	780
CAACTCTCTC	TGATCAATT	TGAGGAATCT	AAGACCTTTT	TCGGCTTGT	TAAGCTTAA	840
AAGAAAAAGC	ATTTAAAAT	GATCTACTAT	TCTTATCAT	GGGCA		885

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

CTTAAGCTTC TACAGGACTG AGAAGAAGT

29

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

CTTGAAATTCC AACATTCTCG GTGCCTGTAA

30

(2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TCAGGATCCA CAAGGCTGTG AGAAGGA

27

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

CTTGTCTAGA CCTGGTGCCC ATGATA

26

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 680 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

ATGCCGGAGG AAGGTCGCC TTGCCCCCTGG GTTCGCTGGA GCGGGACCGC GTTCCAGCGC 60  
CAATGGCCAT GGCTGCTGCT GGTGGTGTGTT ATTACTGTGT TTTGCTGTTG GTTTCATTGT 120  
ACGGGACTAC TCAGTAAGCA GCAACAGAGG CTGCTGGAGC ACCCTGAGCC GCACACAGCT 180  
GAGTTACAGC TGAATCTCAC AGTTCCCTCGG AAGGACCCC CACTGCGCTG GGGAGCAGGC 240  
CCAGCCTTGG GAAGGTCCCTT CACACACGGA CCAGAGCTGG AGGAGGGCCA TCTGCGTATC 300  
CATCAAGATG GCCTCTACAG GCTGCATATC CAGGTGACAC TGGCCAAC TG CTCTCCCCA 360  
GGCAGCACCC TGCAGCACAG GGCCACCCCTG GCTGTGGGCA TCTGCTCCCC CGCTGCGCAC 420  
GGCATCAGCT TGCTGCGTGG GCGCTTTGGA CAGGACTGTA CAGTGGCATT ACAGCGCCTG 480  
ACATACTGG TCCACGGAGA TGTCCCTCTGT ACCAACCTCA CCCTGCCTCT GCTGCCGTCC 540  
CGAACGCTG ATGAGACCTT CTTTGGAGTT CAGTGGATAT GCCCTTGACC ACAACTCCAG 600  
GATGACTTGT GAATATTTTT TTTCTTTCA AGTTCTACGT ATTTATAAAAT GTATATAGTA 660  
CACATAAAAA AAAA AAAAAAAA 680

(2) INFORMATION FOR SEQ ID NO: 37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 846 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

ATGCAGCAGC CCTTCAATTA CCCATATCCC CAGATCTACT GGGTGGACAG CAGTGCCAGC 60  
TCTCCCTGGG CCCCTCCAGG CACAGTTCTT CCCTGTCCAA CCTCTGTGCC CAGAAGGCCT 120  
GGTCAAAGGA GGCCACCACC ACCACCGCCA CCGCCACCAC TACCACCTCC GCCGCCGCC 180  
CCACCACTGC CTCCACTACC GCTGCCACCC CTGAAGAAGA GAGGGAACCA CAGCACAGGC 240  
CTGTGTCTCC TTGTGATGTT TTTCATGGTT CTGGTTGCCT TGGTAGGATT GGGCCTGGGG 300  
ATGTTTCAGC TCTTCCACCT GCAGAAGGAA CTGGCAGAAC TCCGTGAGTT CACCAACCAA 360  
AGCCTTAAAG TATCATCTTT TGAAAAGCAA ATAGGCCACC CCAGTCCACC CCCTGAAAAA 420  
AAGGAGCTGA GGAAAGTGGC CCATTTAACCA GGCAAGTCCA ACTCAAGGTC CATGCCCTTG 480  
GAATGGGAAG ACACCTATGG AATTGTCCCTG CTTTCTGGAG TGAAGTATAA GAAGGGTGGC 540  
CTTGTGATCA ATGAAAATGG GCTGTACTTT GTATATTCCA AAGTATACTT CCGGGGTCAA 600  
TCTTGCAACA ACCTGCCCT GAGCCACAAG GTCTACATGA GGAACCTCAA GTATCCCCAG 660  
GATCTGGTGA TGATGGAGGG GAAGATGATG AGCTACTGCA CTACTGGGCA GATGTGGGCC 720  
CCGAGCAGCT ACCTGGGGGC AGTGTCAAT CTTACCAGTG CTGATCATTT ATATGTCAAC 780  
GTATCTGAGC TCTCTCTGGT CAATTTTGAG GAATCTCAGA CGTTTTTCGG CTTATATAAG 840  
CTCTAA 846

(2) INFORMATION FOR SEQ ID NO: 38:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

ATGCAGCAGC CCTTCAATT	CCCATATCCC CAGATCTACT	GGGTGGACAG CAGTGCCAGC	60
TCTCCCTGGG CCCCTCCAGG	CACAGTTCTT CCCTGTCAA	CCTCTGTGCC CAGAAGGCCT	120
GGTCAAAGGA GGCCACCACC	ACCACCGCCA CCGCCACCA	TACCACCTCC GCCGCCGCCG	180
CCACCACTGC CTCCACTACC	GCTGCCACCC CTGAAGAAGA	GAGGGAACCA CAGCACAGGC	240
CTGTGTCTCC TTGTGATGTT	TTTCATGGTT CTGGTTGCCT	TGGTAGGATT GGGCTGGGG	300
ATGTTTCAGC TCTTCCGCTT	CGCACAGGCT ATAGGCCACC	CCAGTCCACC CCCTGAAAAAA	360
AAGGAGCTGA GGAAAGTGGC	CCATTTAACCA GGCAAGTCCA	ACTCAAGGTC CATGCCTCTG	420
GAATGGGAAG ACACCTATGG	AATTGTCCTG CTTCTGGAG	TGAAGTATAA GAAGGGTGGC	480
CTTGTGATCA ATGAAAATGG	GCTGTACTTT GTATATTCCA	AAGTATACTT CGGGGGTCAA	540
TCTTGAACA ACCTGCCCC	GAGCCACAAAG GTCTACATGA	GGAACTCTAA GTATCCCCAG	600
GATCTGGTGA TGATGGAGGG	GAAGATGATG AGCTACTGCA	CTACTGGGCA GATGTGGGCC	660
CGCAGCAGCT ACCTGGGGC	AGTGTCAAT CTTACCACTG	CTGATCATTT ATATGTCAAC	720
GTATCTGAGC TCTCTCTGGT	CAATTTGAG GAATCTCAGA	CGTTTTCTGG CTTATATAAG	780
CTCTAA			786

(2) INFORMATION FOR SEQ ID NO: 39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 864 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

ATGCAGCAGC CCTTCAATT	CCCATATCCC CAGATCTACT	GGGTGGACAG CAGTGCCAGC	60
TCTCCCTGGG CCCCTCCAGG	CACAGTTCTT CCCTGTCAA	CCTCTGTGCC CAGAAGGCCT	120
GGTCAAAGGA GGCCACCACC	ACCACCGCCA CCGCCACCA	TACCACCTCC GCCGCCGCCG	180
CCACCACTGC CTCCACTACC	GCTGCCACCC CTGAAGAAGA	GAGGGAACCA CAGCACAGGC	240
CTGTGTCTCC TTGTGATGTT	TTTCATGGTT CTGGTTGCCT	TGGTAGGATT GGGCTGGGG	300
ATGTTTCAGC TCTTCAATC	CTCCATCCTC CCCTATGCCG	GAGGAGGGTT CGGGCTGCTC	360
GGTGCGGCGC AGGCCCTATG	GGTGCGTCCT CGGGCCATCC	TCAATCCTAT AGGCCACCCC	420
AGTCCACCCC CTGAAAAAAA	GGAGCTGAGG AAAGTGGCCC	ATTTAACAGG CAAGTCCAAC	480
TCAAGGTCCA TGCCTCTGGA	ATGGGAAGAC ACCTATGGAA	TTGTCTGCT TTCTGGAGTG	540
AAGTATAAGA AGGGTGGCCT	TGTGATCAAT GAAACTGGGC	TGTACTTTGT ATATCCAAA	600
GTATACTTCC GGGGTCAATC	TTGCAACAAAC CTGCCCTGA	GCCACAAGGT CTACATGAGG	660
AACTCTAAGT ATCCCCAGGA	TCTGGTGATG ATGGAGGGGA	AGATGATGAG CTACTGCACT	720
ACTGGGCAGA TGTGGGCCCG	CAGCAGCTAC CTGGGGCAG	TGTTCAATCT TACCAAGTGCT	780
GATCATTAT ATGTCAACGT	ATCTGAGCTC TCTCTGGTCA	ATTTTGAGGA ATCTCAGACG	840
TTTTTCGGCT TATATAAGCT	CTAA		864

(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 828 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

ATGCAGCAGC	CCTTCAATT	CCCATATCCC	CAGATCTACT	GGGTGGACAG	CAGTGCCAGC	60
TCTCCCTGGG	CCCCTCCAGG	CACAGTTCTT	CCCTGTCCAA	CCTCTGTGCC	CAGAAGGCCT	120
GGTCAAAGGA	GGCCACCACC	ACCACCGCCA	CCGCCACCAAC	TACCACCTCC	GCCGCCGCCG	180
CCACCACTGC	CTCCACTACC	GCTGCCACCC	CTGAAGAAGA	GAGGGAACCA	CAGCACAGGC	240
CTGTGTCTCC	TTGTGATGTT	TTTCATGGTT	CTGGTTGCCT	TGGTAGGATT	GGGCCTGGGG	300
ATGTTTCAGC	TCTTCACCT	ACAGCGAGAG	TCTACCAGCC	AGATGCACAC	AGCATCATCT	360
TTGGAGAACG	AAATAGGCCA	CCCCAGTCCA	CCCCCTGAAA	AAAAGGAGCT	GAGGAAAGTG	420
GCCCATTAA	CAGGCAAGTC	CAACTCAAGG	TCCATGCCTC	TGGAATGGGA	AGACACCTAT	480
GGAATTGTCC	TGCTTCTGG	AGTGAAGTAT	AAGAAGGGTG	GCCTTGTGAT	CAATGAAACT	540
GGGCTGTACT	TTGTATATT	CAAAGTATAAC	TTCCGGGGTC	AATCTTGCAA	CAACCTGCC	600
CTGAGCCACA	AGGTCTACAT	GAGGAACTCT	AAGTATCCCC	AGGATCTGGT	GATGATGGAG	660
GGGAAGATGA	TGAGCTACTG	CACTACTGGG	CAGATGTGGG	CCCGCAGCAG	CTACCTGGGG	720
GCAGTGTCA	ATCTTACCAAG	TGCTGATCAT	TTATATGTCA	ACGTATCTGA	GCTCTCTGT	780
GTCAATTTCG	AGGAATCTCA	GACGTTTTTC	GGCTTATATA	AGCTCTAA		828

(2) INFORMATION FOR SEQ ID NO: 41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 846 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

ATGGCTATGA	TGGAGGTCCA	GGGGGGACCC	AGCCTGGGAC	AGACCTGCGT	GCTGATCGTG	60
ATCTTCACAG	TGCTCCGTCA	GTCTCTCTGT	GTGGCTGTAA	CTTACGTGTA	CTTTACCAAC	120
GAGCTGAAGC	AGATGCAGGA	CAAGTACTCC	AAAAGTGGCA	TGCTTGTGTT	CTTAAAAGAA	180
GATGACAGTT	ATTGGGACCC	CAATGACGAA	GAGAGTATGA	ACAGCCCCCTG	CTGGCAAGTC	240
AAGTGGCAAC	TCCGTCAGCT	CGTTAGAAAG	ATGATTTGA	GAACCTCTGA	GGAAACCAT	300
TCTACAGTTC	AAGAAAAGCA	ACAAAATATT	TCTCCCTAG	TGAGAGAAAG	AGGTCTCAG	360
AGAGTAGCAG	CTCACATAAC	TGGGACCAGA	GGAAGAAGCA	ACACATTGTC	TTCTCCAAAC	420
TCCAAGAATG	AAAAGGCTCT	GGGCCGCAAA	ATAAACTCCT	GGGAATCATC	AAGGAGTGGG	480
CATTCAATTCC	TGAGCAACTT	GCACCTTGAGG	AATGGTGAAC	TGGTCATCCA	TGAAAAGGG	540
TTTACTACA	TCTATTCCCA	AACATACTTT	CGATTTCAGG	AGGAAATAAA	AGAAAACACA	600
AAGAACGACA	AACAAATGGT	CCAATATATT	TACAATACA	CAAGTTATCC	TGACCCCTATA	660
TTGTTGATGA	AAAGTGTAG	AAATAGTTGT	TGGTCTAAAG	ATGCAGAATA	TGGACTCTAT	720
TCCATCTATC	AAGGGGAAAT	ATTGAGCTT	AAGGAAAATG	ACAGAATT	TGTTTCTGT	780
ACAAATGAGC	ACTTGATAGA	CATGGACCAT	GAAGCCAGTT	TTTCGGGGC	CTTTTAGTT	840
GGCTAA						846

(2) INFORMATION FOR SEQ ID NO: 42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 876 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

ATGCCTTCCT CAGGGGCCCT GAAGGACCTC AGCTTCAGTC AGCACCTCAG GATGATGGTG	60
ATTTGCATAG TGCTCTGCA GGTGCTCCGT CAGGCTGTGT CTGTGGCTGT GACTTACATG	120
TACTTCACCA ACGAGATGAA GCAGCTGCAG GACAATTACT CAAAATTGG ACTAGCTTGC	180
TTCTCAAAGA CGGATGAGGA TTTCTGGGAC TCCACTGATG GAGAGATCTT GAACAGACCC	240
TGCTTGCAGG TTAAGAGGCA ACTGTATCAG CTCATTGAAG AGGTGACTTT GAGAACCTT	300
CAGGACACCA TTTCTACAGT TCCAGAAAAG CAGCTAAGTA CTCCTCCCTT GCCCAGAGGT	360
GGAAGACCTC AGAAAGTGGC AGCTCACATT ACTGGGATCA CTCGGAGAAG CAACTCAGCT	420
TTAATTCCA TCTCCAAGGA TGGAAAGACC TTAGGCCAGA AGATTGAATC CTGGGAGTCC	480
TCTCGGAAAG GGCATTCATT TCTCAACAC GTGCTCTTTA GGAATGGAGA GCTGGTCATC	540
GAGCAGGAGG GCCTGTATT CATCTATTCC CAAACATACT TCCGATTICA GGAAGCTGAA	600
GACGCTTCCA AGATGGCTC AAAGGACAAG GTGAGAACCA AACAGCTGGT GCAGTACATC	660
TACAAGTACA CCAGCTATCC GGATCCCATA GTGCTCATGA AGAGCGCCAG AAACAGCTGT	720
TGGTCCAGAG ATGCCGAGTA CGGACTGTAC TCCATCTATC AGGGAGGATT GTTCGAGCTA	780
AAAAAAAATG ACAGGATTTC TGTTCTGTG ACAAAATGAAC ATTTGATGGA CCTGGATCAA	840
GAAGCCAGCT TCTTGGAGC CTTTTAATT AACTAA	876

(2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 720 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

ATGGAGCCAG GGCTGCAACA AGCAGGCAGC TGTGGGGCTC CTTCCCCCTGA CCCAGCCATG	60
CAGGTGCAGC CCGGCTCGGT AGCCAGCCCC TGGAGAAGCA CGAGGCCCTG GAGAACACA	120
AGTCGCAGCT ACTTCTACCT CAGCACCACC GCACTGGTGT GCCTTGTGTTGT GGCAGTGGCG	180
ATCATTCTGG TACTGGTAGT CCAGAAAAAG GACTCCACTC CAAATACAAC TGAGAAGGCC	240
CCCCTTAAAG GAGGAAATTG CTCAGAGGAT CTCTCTGTGTA CCCTGAAAAG TACTCCATCC	300
AAGAAGTCAT GGGCCTACCT CCAAGTGTCA AAGCATCTCA ACAATACCAA ACTGTATGG	360
AACGAAGATG GCACCATCCA CGGACTCATA TACCAAGGACG GGAACCTGAT AGTCCAATT	420
CCTGGCTTGT ACTTCATCGT TTGCCAACTG CAGTTCTCG TGCACTGCTC AAATCATTCT	480
GTGGACCTGA CATTGCAGCT CCTCATCAAT TCCAAGATCA AAAAGCAGAC GTTGGTAACA	540
GTGTGTGAGT CTGGAGTTCA GAGTAAGAAC ATCTACCAGA ATCTCTCTCA GTTTTTGCTG	600
CATTACTTAC AGGTCAACTC TACCATATCA GTCAGGGTGG ATAATTTCGA GTATGTGGAT	660
ACAAACACTT TCCCTCTTGA TAATGTGCTA TCCGTCTTCT TATATAGTAG CTCAGACTGA	720

(2) INFORMATION FOR SEQ ID NO: 44:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 930 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

ATGGACCAGC ACACACTTGA TGTGGAGGAT ACCCGGGATG CCAGACATCC AGCAGGTACT	60
TCGTGCCCT CGGATGCGGC GCTCCTCAGA GATACCGGGC TCCTCGCGGA CGCTGCGCTC	120
CTCTCAGATA CTGTGCGCCC CACAAATGCC GCGCTCCCCA CGGATGCTGC CTACCCCTGCG	180
GTAAATGTTG GGGATGCGA GGCGCGTGG CCGCCTGCAC TGAACTTCTG TTCCCGCCAC	240
CCAAAGCTCT ATGGCCTAGT CGCTTTGGTT TTGCTGCTTC TGATCGCCGC CTGTGTTCCCT	300
ATCTTCACCC GCACCGAGCC TCGGCCAGCG CTCACAATCA CCACCTCGCC CAACCTGGGT	360
ACCCGAGAGA ATAATGCAGA CCAGGTCAACC CCTGTTTCCC ACATTGGCTG CCCCAACACT	420
ACACAACAGG GCTCTCTGT GTTCGCCAAG CTACTGGCTA AAAACCAAGC ATCGTTGTGC	480
AATAACAACTC TGAACGGCA CAGCCAAGAT GGAGCTGGGA GCTCATACCT ATCTCAAGGT	540
CTGAGGTACG AAGAACACAA AAAGGAGTTG GTGGTAGACA GTCCCGGGCT CTACTACGTA	600
TTTTTGGAAC TGAAGCTCAG TCCAACATTC ACAAAACACAG GCCACAAGGT GCAGGGCTGG	660
GTCTCTCTTG TTTTGCAGC AAAGCCTCAG GTAGATGACT TTGACAACCTT GGCCCTGACA	720
GTGGAACTGT TCCCTTGCTC CATGGAGAAC AAGTTAGTGG ACCGTTCCCTG GAGTCAACTG	780
TTGCTCCTGA AGGCTGGCCA CGCCTCAGT GTGGGTCTGA GGGCTTATCT GCATGGAGCC	840
CAGGATGCAT ACAGAGACTG GGAGCTGTCT TATCCAACA CCACCAGCTT TGGACTCTTT	900
CTTGTGAAAC CCGACAACCC ATGGGAATGA	930